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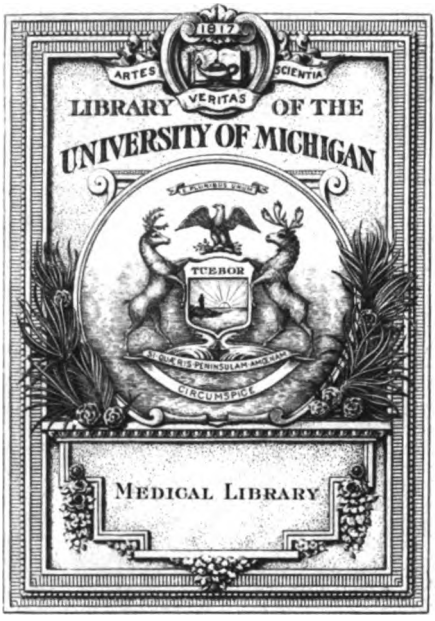

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TRANSACTIONS

OF THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

HELD AT LAKE GEORGE, N. Y., JUNE 24, 25, 26, 27, 1879.

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PREFACE.

THE *Transactions* of the Thirty-second Session of the American Institute of Homœopathy are herewith submitted. This volume could have been issued some weeks earlier had not the editor been compelled to devote much of his time to the volumes of the World's Homœopathic Convention, with the intention of bringing out at least one of them before now; but circumstances entirely beyond his control have rendered it impossible. He would urge in extenuation of whatever errors may be noticed, the haste he has felt obliged to make, and his labor upon one of the 1876 volumes, often editing the two side by side and reading the different proof-sheets at the same time—not always an easy task.

It should be explained in reference to Section II, that the papers and discussion of the Bureau of Materia Medica, etc., were arranged in the order in which they appear by special request of its chairman. Attention is invited to Section VI, the Report of the Bureau of Organization, Registration, and Statistics, pp. 690 and 691. The editor, after carefully examining the "College Reports," prepared from blanks furnished by the Institute, concluded it would be a great saving of space and more convenient for ready reference to *tabulate* them, which he has accordingly done; and now, as will be seen, the eye can take in at a glance the summaries of each college, such as the duration of its annual course, lectures, matriculants, graduates and their residences, etc.

It may be stated in this connection that the *historical* volume of the World's Homœopathic Convention is well forwarded and will be completed in a few weeks.

All of which is respectfully submitted.

JOSEPH C. GUERNSEY, M.D.,
Editor.

PHILADELPHIA, October, 1880.

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THIRTY-SECOND SESSION

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LXVIII.

PROCEEDINGS

OF THE

THIRTY-SECOND SESSION

OF

THE AMERICAN INSTITUTE OF HOMŒOPATHY.

HELD AT LAKE GEORGE, N. Y., JUNE 24, 25, 26, 27, 1879.

FIRST DAY.

MORNING SESSION.

THE Institute was convened in its Thirty-second Session and Thirty-seventh Anniversary at the Fort William Henry Hotel, Caldwell, Lake George, N. Y., on the morning of Tuesday, June 24th, 1879, and was called to order at nine o'clock by the President, Conrad Wesselhœft, M.D., of Boston, Mass, who occupied the chair.

THE PRESIDENT then delivered the following Annual Address:

PRESIDENT'S ADDRESS.

Ladies and Gentlemen: The subjects upon which I would offer some reflections are partly derived from events concerning this Institute for the past year, and partly from affairs at large. I mean the origin and work of the Yellow Fever Commission, and the organization of medical societies.

The special report of the Yellow Fever Commission is in good hands, and speaks for itself. It is the origin of this report and

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how it came into the world that I desire to explain to you. When we last met there existed no necessity for such a report. So far as we knew the health of the country was all that could be desired. But in the course of the summer a fearful epidemic of yellow fever raged along the southern banks of the Mississippi. A commission was soon appointed on the part of the Government, urged by philanthropists, to inquire into the nature of the Southern scourge. No physician of our school had a voice upon that commission, ignored as they always had been by the dominant school, who mainly advised the Government in such matters. Even the voice and untiring energies of Dr. Verdi, the chairman of the Committee on Legislation, did not succeed in obtaining the degree of representation of our school that in the name of justice and common-sense it deserved.

It was in the early part of October, 1878, that appeals were addressed to me from various quarters to exert my influence as President of this Institute in appointing a commission from among physicians of our school to examine into the nature of yellow fever from our point of view; that is, not only to speculate and theorize upon its hypothetical causes, but to examine into and devise, if possible, means for the cure of the disease, and methods of its prevention.

This appeal required no lengthy deliberation on my part. I had, it is true, no direct authority from the American Institute to appoint such a commission, and in the nature of things I could not have; for there was no yellow fever when we last met; the calamity arose after our last meeting, and an extra session could not be called to decide the matter, for months of valuable time would have been consumed.

Therefore, as the appeal to me was seconded by many voices, without dissent, not only by physicians residing in my vicinity, but in many remote parts of the United States, as it was supported warmly and unequivocally by the officers of this Institute, I did not hesitate to appoint the gentlemen whose names were suggested to me, particularly as many had had personal experience in yellow fever epidemics, and resided in districts that were or had been visited by yellow fever.

In accordance with the exigency of the case, a brief note,

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dated October 23d, was sent to the gentlemen named in the report, requesting them to serve, and stating the object of the appointment, which was *to collect data concerning the prevention and cure of yellow fever, and especially with regard to its relation to homœopathic treatment.* The commission were to meet as early as possible in New Orleans, subject to the call of the chairman, Dr. W. H. Holcombe; and they *did* meet on the 2d day of December, 1878, and the valuable document which undoubtedly all of you have seen is the result of their researches.

This seems simple and easy, but when I remind you that all this was done at the greatest personal inconvenience of all the gentlemen appointed, connected with expense, and loss of time to many busy and much-tried physicians, I cannot warmly enough express my thanks at the purely unselfish readiness with which the appointment was accepted by all, long before the liberal offer on the part of Mrs. Elizabeth Thompson had been received. To this philanthropic lady the warmest thanks of the Institute are due.

In particular I have to express my personal gratitude to Drs. Holcombe, Verdi and Dake for their ready advice, willing co-operation and promptness of action, to which was mainly due the success of the commission.

And lastly, I have earnestly to appeal to the Institute to give its prompt and emphatic indorsement to what has been accomplished by its officers, as an act outside of their routine duties, a necessity which could not be foreseen, but which demanded prompt action.

During the progress of correspondence and arrangements I was made aware that the duties of the President of the Institute would not devolve upon me, according to our by-laws, until January 1st of this year, and that consequently Dr. Burgher was really acting officer, and should have made the appointments. It was an oversight, not only on my part, but also on the part of those who first appealed to me. I would very gladly have relinquished the business, which, however, had proceeded so far that it could not be done over again. On this account Dr. Burgher expressed himself satisfied with my explanation, and most courteously allowed me to proceed. Whatever satisfaction

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and praise may be due on the part of the Institute for the result achieved by the Yellow Fever Commission should be shared by Dr. Burgher, the now ex-President of this Institute.

Let me now turn your attention to a subject which ever since the Institute stood has been discussed. It is *the basis on which our medical societies are organized.*

The motive for inquiring into this subject is furnished by the occasional discussion of a sectarian character, observed here and there in our homœopathic as well as old-school societies. You are undoubtedly familiar with the views expressed by different factions, in different States, regarding qualifications for membership. I shall not touch in the least upon special instances any further than to remind you that they have existed and still exist.

But I intend to regard the subject entirely in the abstract, and independently of individual and special instances. Let us consider the subject, not only with regard to its relation to our own school, but also in its relations to the rest of the medical world.

In examining the by-laws of different State and local societies to see what qualifications are required for membership in a society devoted to the development and protection of homœopathic practice, we find words something like these: "The association shall be composed of all accredited homœopathic physicians," etc. "The candidate must have the degree of doctor of medicine from some organized medical school," etc. (Illinois State Soc.) Or the society, like that of the State of New York, being a body composed of delegates from local homœopathic societies, has no requirements except those implied in the name homœopathy, and the indorsement of local or county societies.

Other societies formulate their qualifications for membership so as to include "any physician of good moral character who has received the degree of doctor of medicine from some regularly incorporated college, and who *subscribes* to the doctrine *similia similibus curantur*," etc.

This form is adopted by the Tennessee State Society, and its sense, and almost its wording, is also found in the qualifications for membership in the State societies of Pennsylvania, Ohio and Indiana. Formerly the State society of Massachusetts contained

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a similar clause, only demanding belief in the dogma of *similia similibus curantur* instead of asking the candidate to subscribe to it.

The constitution of the Homœopathic Medical Society of the County of New York demands as a qualification for membership that the candidate, whose requirements should be in accordance with the laws of this State, should also practice upon the principle, *similia similibus curantur*, etc.

The above qualifications for membership, then, are based on the conditions that the candidate applying for membership believes in, subscribes to, or practices according to the principles of homœopathy. Besides these qualifications there is generally another constitutional clause to be found in the "constitution and by-laws" of homœopathic societies, declaring the object of the society to be *the advancement of medical science.*

It would seem as if such platforms were liberal and broad enough to meet every shade of opinion and practice, to set aside and to obviate all dissensions, and to place us in a position of strength towards other schools and methods of practice.

But such, in reality, is far from being the case. Not that frequent little or even greater dissensions have disturbed or are likely to disrupt our societies, or permanently to hamper our progress; but all our societies, great and small, bear within themselves—in many cases unconsciously—the elements of dissension.

One of these elements is that according to which a physician of another school or method of practice, that is, one not believing or subscribing to the principles of homœopathy, cannot, on any account, become a member of our homœopathic societies. Were such a one found to have been inadvertently admitted he ought to be, and could be, excluded.

Let us examine this subject briefly. Up to the present day old-school societies are excluding and expelling those of their members who have either since their admission or afterwards adopted homœopathic practice. Such has been the case in every State of the Union. I need only recall to your memory Ann Arbor as a strongly illustrative example of that spirit, not to mention minor occurrences. We may recall also the more ardent struggle undergone within a few years by homœopathic physicians in Massachusetts, who, with heroic fortitude, endured

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expulsion from the old-school State society, *not* because they cared to remain in it, but because they *dared* that society to break their own laws and those of the State and common justice. And that society did it.

In doing so it disclosed all its weaknesses and taught us and the world a lesson, namely, how *not* to organize societies. That is, they expelled a number of physicians for "practicing according to a certain 'exclusive' theory or dogma, and for belonging to societies whose principles are at variance with the society" who expelled those physicians; thus actually and virtually, in broad daylight, doing the very thing for which they condemned others.

They neglected, ignored and grossly violated the very principles on which are founded all medical societies: the right to discuss, test and examine to the root every medical principle.

The result was and is, that we were forced to organize medical societies of our own, from which grew journals, hospitals and colleges.

Being driven into the world to shift for ourselves, under no tutelage but our own, the position of antagonism in which we were placed made us strong in our union; a common interest united us to such a degree that we overlooked, once and for all, an error of principle: being excluded we became exclusive ourselves. We demanded a creed of candidates for admission to our societies.

Of course this was overlooked; could there ever be a question as to who should and who should not be members of our harmonious fraternity? Apparently we were right; but in principle *wrong*. We should have begun by flinging open our doors wide to every honest physician of proper attainments, as was first strongly urged by Carroll Dunham.

The question comes home to us still stronger when we begin to test the qualifications of applicants who claim to believe in or to practice homœopathy. The question comes up as to who is a homœopathist? This has caused more bitter and painful feuds than the illiberal aggressions of other schools.

Here we have a variety of shades of opinion and practice. Let me briefly classify them.

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There are those who are contented to follow the rules of homœopathy as announced by Hahnemann; who follow him closely with regard to proving, preparing and administering remedies, as well as adhering to the dose recommended by the founder of our school as the probable limit—the safest and the best.

Then there are those who practice homœopathy in every particular, but who do *not* find it practically useful to refine the dose to the degree proposed by Hahnemann.

Those again who transcend the propositions of Hahnemann, in regard to the dose, *millions* of times farther than the former class fall short. In this and in all other respects this class of practitioners claim to follow the master in every particular; but cling to his exceptional and casual remarks concerning the dose as if these constituted the sum and substance of his teaching.

Another class of practitioners, while among the first to honor the name of the founder of our school, deem it a higher tribute to his name to endeavor to perfect that for which the originator only claims to have laid the foundation. In this sense they prefer not to be ranked as mere worshippers of a man, whose practical rules, however far-reaching, they do not recognize as absolute, infallible laws, laws without exceptions, laws, the deviation from which means heresy, deserving contempt and punishment.

Now shall we exercise a censorship in our societies which shall decide that a physician can be regarded as a homœopathist only when he adheres closely to the rules of Hahnemann, supposing we were justified in forming such a definition? It is impossible, and still your creeds demand it. Shall we all sign a "declaration of homœopathic principles," or belief in a method of practice, as was lately proposed to us, in order to be enrolled in the "Legion of Honor," as those who have subscribed call themselves? Your creeds seem to demand such a course. Why not follow it, and place yourselves under the command of a few who presume to rule over the faithful flock of believers? Religions may require such a course. No rod of terror, no excommunication or anathema can terrify the free man of thought. Shall we exclude from our societies those who do not unconditionally accept the propo-

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sitions of Hahnemann, especially with regard to the limit of the dose? Shall we exclude a physician because he has not yet wholly and absolutely adopted those propositions,—has not wholly weaned himself from former practices,—and occasionally resorts to the traditional treatment of the older school? Shall we exclude or punish a physician whose affiliation with us consists only in a tentative predilection; who partly acknowledges the merits of our method of practice, but timidly stands aloof till he feels himself reassured? Lastly, shall we exclude those who, from ignorance or conviction, do not choose to associate with us? It seems to me their case is very easily disposed of without explanation.

But I must say that there are those who have but partially espoused our school of practice. A class which contains a wavering element, exercising a powerful retrograde effect on those who would otherwise join us wholly. Inasmuch as they are imperfectly grounded in homœopathy they misapply it, constantly mixing and confusing methods of practice to an incredible degree; giving larger doses of powerful drugs than even a rampant Galenist would prescribe. All this passes for homœopathy. But such men also practice according to the old school. When we have an opportunity to compare this with their homœopathy we are puzzled to discern the difference in a practice arising both from imperfect knowledge and an indifferent regard for principles. Here we encounter *license*, rather than liberty; yet a certain honesty of purpose to benefit the sick cannot be questioned. *Liberty of action*, claimed by such practitioners, without doubt, is beyond control of sect or society. It is largely a question of medical ethics, and as such will receive judgment.

Nevertheless the confessions of faith required by most societies could be employed to expel or *exclude all those classes*, or draw lines admitting only one or more of them.

Organizers of our societies have invariably discovered that such distinctions of shades of belief were practically useless and unjust, because ethically, and, hence, logically, wrong. But governed by some prejudice, biassed by some indistinct fear, anxious to reconcile all, yet often desirous of pleasing a few, the first constitutions of our societies were drawn up, and their form has

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remained so ever since, containing within themselves a *contradiction.*

The advancement of medical science in general has been often construed as not harmonizing with the purposes of homœopathic societies. The discussion of other methods of treatment has often irritated those who prefer the exclusive adherence to homœopathic principles. The question of the *dose* has divided physicians, more than any other, into parties. All questions which must remain open till they are determined by agreement, or on an absolutely scientific basis. To their consideration our societies should be open. Practically they have been so, but the smouldering spark may burst into a flame of discord at any time.

How can the danger be best averted?

The course is simple. The way to overcome the objection of *exclusiveness* is plain enough, and there is no need of subjecting ourselves to the just accusation of excluding others, or of justifying others from excluding us.

On the other hand, the exclusion of partial adherents of our school should no longer be a source of reproach. We *cannot* afford to lose a well-wisher. One who only occasionally prescribes homœopathically is *a* homœopathist. We *must* give him an opportunity to be *wholly* one, instead of shutting him out, vexing him with partisan epithets, and driving him into the arms of the older school.

Let each medical society, great or small, define as precisely as it pleases the *plan of scientific work it proposes to do.* Let it do so in the place of a vague, ambiguous formula, such as "the advancement of medical science." Let your society in organizing state as sharply and clearly as words can state it, HOW *it proposes to advance medical science.*

In organizing a HOMŒOPATHIC society should clearly state the *points* it desires to perfect, advance and elucidate. For instance, let it say:

"*The development of the Materia Medica by proving drugs (upon the systems of men and animals),*" etc.

"*The perfection of pharmacology, with regard to the most reliable methods of preparation of medicines, the dose,*" etc.

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"*The administration of medicines thus proved and prepared, according to the formula* (law or rule) *similia similibus curantur*," etc.

"*Accumulation of proofs of the efficacy of the law of similars*," etc.

A society in organizing may stop here, or it may specify still more closely. It may add other work as it pleases, in order to enlarge its scope of usefulness by proposing to investigate any special or *all* branches of medical science.

Such work has been and is proposed in the constitutions and by-laws of most, if not all, of our societies. As a matter of course this opens their doors to old-school practice.

The question arises: Must and shall such a contingency be avoided?

If allowed, will it endanger the plan of homœopathic work?

My answer is: There is no law of ethics or science which could exclude such work. It is wholly and entirely a matter of option and agreement of what kind of work and how much a society wishes to perform. If it will test, explore and investigate the whole field of homœopathy, and add to that extensive and exhaustive researches in other directions, which are not connected with homœopathy, it may do so. But it must be remembered that life is short and art so very, very long. *Societies may limit their work, and thereby* ALONE *limit the class and kind of their members.*

The danger of injuring homœopathy by the admission of non-homœopathic or anti-homœopathic discussions lies *only* in the *loss of time* devoted to the latter.

The inherent truths of homœopathy, the rights of men to think and practice homœopathically are inalienable; they cannot be wrenched from us; they will stand just as long as men will stand by them, work for them and improve them.

I have already referred to a "Declaration of Homœopathic Principles," which many have signed and returned to its author.*

* *Essential Points of the Homœopathic Doctrine.*—The cure of the sick is most easily, mildly and permanently effected by medicines that are themselves capable of producing in a healthy person morbid symptoms similar to those of the sick.

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There is no *objection* to them; all of us might safely accept them (reserving our right to judge of clauses 2d and 6th as purely theoretical). But none would consider them exhaustive. As the embodiment of principles and practical rules many more of equal weight might have been added from *The Organon.* On the other hand, these "essential points" might have been cut down to a smaller figure. *It is impossible to embody the principles of our school in a brief clause or formula of belief.* The attempt to do so has met, and always *will* meet, with just objections, for they are *cramped* and *distorted* in the *very act* of formulation. But that is not the main objection. The great question before us is, What shall a society do *with* such a formula? Shall it merely be the watch-word, the parole of a kind of Masonic fraternity? a countersign which is dead and meaningless as soon as friend has recognized friend? Such is its fate in the form of a creed. As such it presupposes perfection, and shuts out research, investigation and work. When put in the form of a *plan of work,* when that plan is an order of business, limited only by our strength and time, then, I say, such a formula *has life in it.* Though brief in expression, it is like the word of command that moves an army. As a creed, not comprehensive enough as a declaration of principles, it becomes a mere countersign; it serves only to distinguish us from our opponents, and there its office ends.

Now having determined the object and plan of work of a society, and having laid out *plenty of homœopathic work,* we are enabled to invite all to come and help us, without exacting an expression of belief—a creed. This would at once place us in a firm and just attitude, not only toward our opponents, but

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The changed and morbid conditions of tissues and organs are *results* of a dynamic disturbance, and not the *cause* of disease.

The totality of the symptoms, subjective and objective, is the sole indication for the choice of the remedy.

The only proper way to ascertain the sick-making properties of medicines is to prove them on the healthy.

In order to secure the best possible practical results, medicines must be adminstered singly, and in a dose just sufficient to cure.

And *local treatment* of all kinds in *non-surgical* cases is not only unnecessary, but is apt to change the location of the disease, and induce dangerous complications, and never *permanently* cures.

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more particularly toward our friends, and those who are inclined to become our friends. The work our society has laid out will wholly determine who will join us and work with us. In the light of progressive investigation, it will attract; in the form of dogma or creed, it will repel every thinking man and woman.

If homœopathy is perfected in all its details; if there are absolutely no exceptions to the law of similars; if we *never fail* in its application; if our pharmacological methods are perfect, and no longer require experimental and clinical research, why, then we need no societies at all—they have outlived their usefulness. If they are only so many churches for the propagation of a creed, subject to all its schisms, contentions, hatreds and persecutions, they are no longer needed among men whose aim is to know positively what they can know.

At the meeting of 1874 certain changes were adopted in the constitution of this Institute, which, instead of calling itself an institute of homœopathy, with the object of improving the science of medicine, boldly abolished this ambiguous term, and declared its object to be the improvement of *homœopathic therapeutics*, and, next in order, all other departments of medical science; therein following the Massachusetts Medical Society, which had adopted a similar clause in 1873, as also the Boston Homœopathic Society. In the practical working of such constitutions we perceive no evil results. The old-school physicians have not rushed in, to crush us by superior numbers. *They* stand in the light of exclusiveness, while our doors are open to them. If they come, the work is laid out for them.

I have dwelt at length upon a topic which may seem antiquated. As far as the liberal spirit of our physicians is concerned, it may seem old; but there is something new in it till the matter is fairly understood and the true attitude assumed.

Now let us turn to the business laid out for us. In proceeding upon its course let me beseech you to be patient with my shortcomings, and accept my promise to do the best I am able.

THE PRESIDENT then declared that the Institute was open for the transaction of the business of the session, and that the Order of Business prepared by the Executive Committee would

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be adhered to, except when otherwise ordered by the Institute.

On motion, the Vice-President, N. FRANCIS COOKE, M.D., of Chicago, was requested to take a seat upon the platform, which he accordingly did

T. P. WILSON, M.D., of Cincinnati, moved, and the motion being seconded was put by the Vice-President and carried, that the President's Address be referred to a committee of three.

THE PRESIDENT then appointed the following:

AUDITING COMMITTEE.

J. P. DAKE, M D., Nashville, Tenn.
HENRY D. PAINE, M.D., New York.
HENRY M. SMITH, M.D., New York.

F. R. MCMANUS, M.D., of Baltimore, Md., Chairman of the Board of Censors, then requested that applications for membership be placed in the hands of the board without delay, to afford a proper opportunity for investigation of the claims of applicants and an early report thereon; and he further made an earnest appeal to members to not affix their names to applications without a full knowledge of the applicant. Every one who guarantees an applicant should feel himself morally and personally bound by his guarantee.

THE VICE-PRESIDENT then appointed the following gentlemen to constitute the *Committee on the President's Address:* T. P. Wilson, M.D., of Cincinnati; D. S. Smith, M.D., of Chicago; David Thayer, M.D., of Boston.

THE PRESIDENT then appointed Henry B. Clarke, M.D., of New Bedford, Mass.; William Owens, M.D., of Cincinnati; and Clement Pearson, M.D., of Washington, D. C., to complete the Board of Censors and fill the vacancies occasioned by the absence of three members of the board.

I. T. TALBOT, M.D., of Boston, called attention to the fact that the Bureau of Organization, Registration and Statistics now acted as a *Committee on Credentials*, and asked all those who had credentials from societies, institutions, etc., to hand them in without delay.

BUSHROD W. JAMES, M.D., of Philadelphia: *Mr. Presi-*

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dent: We have with us to-day a distinguished gentleman from abroad who is a delegate from the British Homœopathic Society to this body; a man who has championed the cause there for many a day, and one who is well known to us all as the talented editor of one of the ablest and most influential of the journals of our school, *The Monthly Homœopathic Review*, and a man who is held in deservedly high esteem in his own country. I move, sir, that he be received by this Institute and welcomed as the delegate from Great Britain; that he be invited to take full and free part in our deliberations and discussions, and that he take a seat upon the platform with the officers of this Institute. I refer to Dr. Alfred C. Pope, of London, England.

The motion of Dr. James was received with great applause, and was vociferously adopted.

DR. D. S. SMITH, of Chicago, moved, and it was carried, that the Vice-President conduct Dr. Pope to his place. Vice-President Cooke thereupon conducted Dr. Pope to the platform.

DR. ALFRED C. POPE.—*Mr. Chairman, Ladies and Gentlemen:* I thank you most cordially for your kind reception of me, and for the honor you do me in inviting me to occupy the platform and take part in your proceedings.

REPORT OF THE PUBLICATION COMMITTEE.

The Report of the Publication Committee was then presented by the General Secretary, as follows:

MR. PRESIDENT AND MEMBERS OF THE INSTITUTE:

The Report of the Committee of Publication is called for, but I wish it to be understood that in this instance the report will be that of the General Secretary alone, as that officer does not wish on this occasion to share the honors or the reproaches with his colleagues of the committee.

Your General Secretary would report, therefore, that the Proceedings of the Institute for the last session, held at Put-in-Bay, in June, 1878, has at length been published, and presents a volume of nearly 700 pages, including the Code of Ethics of the Institute, republished by your direction. These volumes to the number of 150 will, I trust, be here ere the adjournment of this session, for distribution by the Treasurer, since they were sent by express from Philadelphia on Friday last. The remaining volumes will be distributed on my return home.

In regard to the two volumes of the *Transactions of the World's Homœopathic Convention*, your Secretary would state that he has nearly 400 pages of

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volume 2 printed, and that the manuscript of the remainder of the volume is nearly ready for the printer; and that in regard to volume 1, being the minutes and papers of the convention, a plate of the late Dr. Dunham has been prepared and printed, nearly 600 pages of electrotype plates have been prepared and nearly begun to be corrected and made ready for the press, and that the remaining manuscript for this volume is also nearly ready for the printer. Thus, you will perceive, that these volumes are well forwarded.

THE SECRETARY: And now, Mr. President and Gentlemen, having presented my official and written report, I have something further to say on this subject of publication. It is painful to me to feel myself necessitated to speak as I am about to do, but I feel that it is just, alike to you and myself, that I should enter into an explanation.

There is no one among you more thoroughly conscious of the fact that a great deal, a very great deal, of dissatisfaction is felt in regard to the delay in the publication of the *Transactions of the Institute*, and more particularly in regard to the delay in the publication of the volumes of the Proceedings, etc., of the World's Homœopathic Convention of 1876.

I became Secretary of this body in 1871, at the session then held in Philadelphia, very much against my inclination, and, I may say, against my will and without my knowledge or consent, for I had no idea that I would even be proposed for the office of Secretary until I was informed by some friends, while sitting in an anteroom that I had been elected. I, however, accepted the office as a high compliment and in good faith, and for six years I did the work in such a way as you all know of. Individual members and the Institute as a body assured me from time to time that my work was acceptable and satisfactory, and I had every reason to believe that it was both. The volumes were gotten out in good season and in fair condition, and compared in both these respects with any that had preceded them.

But the work of the secretaryship began to be too much for me. My practice was large and constantly increasing, and I found that labor and care and trouble and ill-health were all combining to break me down, and that I must cease from some of the work I was doing. Therefore I determined to resign at the meeting held at Lake Chautauqua, and I announced this fact

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to the members of the Institute who were my particular and intimate friends. In fact it was known to the Institute that I was no longer willing to go on with the work. Up to this time your Secretary had done all the work of the Institute for six years, without any compensation whatever. He paid his dues, his travelling expenses, his hotel bills, just as you do; and he had no reward except in the consciousness of usefulness and in the votes of thanks of the Institute, and even this last was once omitted.

But the members of the Institute, or at least many of them for whom I have a very high regard, and in whose estimation I desire always to stand well, persuaded me, against my will and wishes, I may say, to continue in the work which, they said, I seemed to be particularly adapted for, and consequently I was elected General Secretary for a term of five years, with a salary of one thousand dollars a year. I felt that there was such a unanimous desire on the part of this Institute to have me go on, and that they were willing to pay me a large salary to have the work continued in my hands, and hence I must accept; and, instead of continuing in my determination to decline the secretaryship and of offering myself as a candidate for the presidency, and thus "going through the chairs," I listened to the voices of the various sirens and became the General Secretary once more by a unanimous vote.

My first year's experience as a *paid* Secretary was not, I must say, as pleasant as its unpaid predecessors, but that was a matter of but little moment. I found, however, that, apart from this, my work was more oppressive, more irksome than it had ever been, and that my opportunities were fewer. Notwithstanding this, however, the volume of the Chautauqua meeting was out in time, and was ready, in fact, before the allotted time had expired, but was delayed by the plates accompanying the valuable paper of our friend, Dr. Ludlam, of Chicago. Now, with this feeling on me, that the burden was becoming greater and heavier, and the work more distasteful and tiresome, and the opportunities fewer, and even the ability to work ever growing less, there fell to me as a legacy from our lamented Dunham the getting out of the volumes of the World's Homœopathic Convention. My

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eyes failed me, and I could not read proof at night; in fact, I could not read anything at night, which was a terrible deprivation, as those of you well know who are acquainted with my ways. My time for reading and for work was night; and the day being devoted to professional labors, I lengthened it out by taking the advice of our friend, Tommy Moore, and stole a few hours from night, my boys. Between ten and eleven at night and two and three in the morning was my time for reading, study, and work; and when my sight failed so that these hours were taken from me for useful employment and my days were fully occupied with practice and the duties of an important professorship, you can readily see how it became almost an impossibility for me to get along with Institute affairs. Those of you who are busy men will understand how, after a busy day of practice, it is impossible to steal a few hours from day for any other purpose. As for rest and relaxation there was no such thing for me. Still I got a little done now and then, but the work kept getting the better of me all the while, and finally I defaulted with the volume of last year's meeting, and failed to get them out until now, when a recent improvement in health and a let-up in professional business gave me the opportunity. My health now is very much better than it was last winter, when I was twice down in my bed, and my good physician, Dr. James, who sits before me, at one time, I think, thought it was all up with me. I have been better since that time, however, and feel more like working than I have done for a long time. I feel, in fact, as if there could not be too much work for me to do, but I don't know how long that will last.

Now, in regard to the *Transactions of the World's Homœopathic Convention*, which have been a thorn in my side, and a thorn in your sides I have no doubt, I have this to say: There is no man in this Institute can possibly overestimate the amount of work which has been required to be done in these volumes, or, I may say, has got to be done. No man can know, save myself and perhaps one other, what a job it has been; and when you receive these volumes, should any feeling of disappointment arise, don't blame me, but impute it to the force of circumstances, over which I have had no control. I have done and will do the very

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best I can with them; and possibly it may be because of the great labor and bitter disappointment they have caused me that I take a jaundiced view of them, and you may be better pleased than I. I wish you, however, to bear in mind the many disadvantages under which I labored, and the special disadvantages under which I labored in regard to these *Transactions*. The convention was arranged almost entirely by our friend, Dr. Dunham, and its success was due almost entirely to his efforts. He had all the papers, minutes, memoranda, etc., and in his mind was stored away all the connective tissues, all the missing links, all the material necessary to make a connected whole of the disjointed fragments. He could have rounded all the sharp corners and cremated all the rough material. It was all stored away in his great mind, and, had he lived, order would have come out of the chaos, and such order as would have been delightful to us all; but to expect another man, without the knowledge he had of all these things, and without his great ability, to do as he would have done, is expecting, in my opinion, entirely too much. Nothing short of the rod of the enchanter could procure such a miracle. I wish you to remember these facts, and also this additional fact, that the papers of the convention did not come into my hands until nearly a year after the convention had been held in Philadelphia.

It has been stated, I believe, or it has come to my hearing, that a statement has been made that the papers of the convention were prepared by Dr. Dunham, and that all I had to do was to get them printed. I will read you a letter from a gentleman, a physician, who assisted me with these papers, and to whom I paid a salary out of my own pocket for his valuable aid. The letter is as follows:

PHILADELPHIA, June 16th, 1879.

R. J. MCCLATCHKY, M.D.

DEAR DOCTOR: In reply to your note of June 12th, in which you ask me to state my knowledge of the condition of the papers of the World's Homœopathic Convention, received by you from Mrs. Carroll Dunham in February, 1877, I have this to say briefly:

1. I was with you when the box containing the papers was opened, and we handled and examined the papers together, and I remarked that we were both greatly surprised at their confusion, and, upon closer inspection, still more surprised at their paucity.

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In relation to the papers intended to represent the history of homœopathy in the United States, statistics and other matters of interest were conspicuous by their absence.

Massachusetts was not represented even by a scrap of data. W G. furnished H. M. Smith's excellent scrap-book, but beyond that there was nothing save a few autobiographies, MS. letters, and college and dispensary reports.

Pennsylvania was very imperfectly written up by Dr. J. B. Wood.

Michigan presented statistics, no doubt carefully compiled by Dr. Woodruff, together with the history of the university war

Maine and New Hampshire presented reports, and some few other States, but from most of them we found almost nothing, or if any report, so imperfect as not to be fit to use.

Many gentlemen who furnished papers seemed to be of the opinion that the history of homœopathy in their respective States was entirely autobiographical.

None of these papers were arranged, nor had anything been done looking to their arrangement.

I remember well our weary work over these papers, and I think I am safe in saying that we consulted at least two hundred and fifty volumes of journals, transactions, college announcements, etc , to make out even an imperfect history. The difficulty of finding data concerning some parts of this work was very great.

The Italian history was only partially finished, and not more than half translated.

Many of the translations from foreign languages were so badly done that a new translation into grammatical English was necessary from the existing translation.

The arrangement of the papers of volume one had been but partially made by Dr Dunham. The rewriting and arranging of the phonographer's notes and of the MSS. of those taking part in the discussions, was a matter of immense labor and of almost insurmountable difficulty.

No doubt Dr. Dunham, who was rather sick shortly after his return from his trip to Lake Superior, had no opportunity of working on these reports and papers at all. Anyhow they bore no marks of his order-making hands.

I remember speaking to you in regard to the publication of those volumes and saying that the condition of the MSS. was enough to dishearten a man, and having been somewhat of a literary man myself, and having some regard to reputation, and knowing that you would be held responsible for those imperfect volumes, I remarked that they would do you no credit, owing to the impossibility of finishing some of the reports and the general condition in which you received the papers, with so much depending upon what was stored away in the mind of Dr. Dunham.

I am, dear doctor, yours very truly,

T. L. BRADFORD.

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This letter gives you an idea of the condition of these reports and papers when they came into my hands. Had Dunham lived he would have gotten out the volumes within eighteen months or two years after the adjournment of the convention, and I do not believe that even he could have done it in less time. These papers were sent me but a brief period prior to Dr. Dunham's death, and I was assured by Mrs. Dunham that it was the greatest possible relief to the doctor to know that the papers were in my hands, and that I was willing to undertake the work of getting out the volumes; and I assure you that I reproach myself more and feel more regret at the delay in the publication of these volumes on account of my reverence for the memory of Dr. Carroll Dunham than for any other cause.

What I desire to impress on your minds is, that all this is due to what I have called the force of circumstances. I know there is no one here who has suspected me of being a fool, and there is certainly no one who would suspect me of wilfully and deliberately flying in the face of the Institute and neglecting its work, which is not my record at all. I have made a record in our school which I have some reason to be proud of, in its literature and in various ways, and there is not a blot on my escutcheon save this one, that by the force of circumstances I have been unable to do certain things which should have been done, and of keeping promises which you think should have been kept.

This much for the past; and now for the future. I am desirous of getting rid of all of this kind of work; and I must do it. I have thrown off the journal that I edited for ten years, and yet that is not enough of relief, and I must throw off the Institute work also. I intend, therefore, to tender my resignation as General Secretary, to take effect on the first of January, 1880. You will remember that I was elected for five years, and that two of these years will expire on the first of January next.

I wish to have my resignation accepted, to take place at that date, and between now and then,—within the next five or six months,—or as soon as I possibly can, I will put out the two volumes of the *World's Convention*, and the volume which will represent the proceedings of this meeting, and turn over to my successor all the archives, etc., pertaining to this office, so that he

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will have nothing to do but prepare for the next meeting. I want to go out of the secretaryship, in which I have served so long, with a clear score, and with the good-will and wishes of you all.

The Secretary's remarks were received with applause, after which

DR. D. H. BECKWITH, of Cleveland, O., moved, and it was carried, that a committee of five be appointed by the Chair to take into consideration the report of the General Secretary and the remarks which accompanied it, and report thereon to the Institute.

THE PRESIDENT accordingly appointed the following gentlemen to constitute such committee: D. H. Beckwith, M.D., of Cleveland; D. S. Smith, M.D., of Chicago; T. P. Wilson, M.D., of Cincinnati; I. T. Talbot, M.D., of Boston; and J. C. Burgher, M.D., of Pittsburg.

THE SECRETARY announced that the Institute box had not yet come to hand, and that consequently there would be a scarcity of blank applications, etc.

THE PRESIDENT: The Report of the Treasurer is now in order.

E. M. KELLOGG, M.D.; Treasurer, stated that he would not be able to make up his accounts until the arrival of the Secretary's box, and asked that he be allowed to present his report when ready, which was agreed to.

NECROLOGICAL REPORT.

HENRY D. PAINE, M.D., of New York, Necrologist, then presented the Necrological Report, by synopsis. The report was accepted and referred to the Committee of Publication. (Section I, Art. LXX.)

THE PRESIDENT announced that the next business in order would be the presentation of the report and papers of the

BUREAU OF SURGERY.

GEORGE A. HALL, M.D., of Chicago, chairman of the bureau, then presented the report. He said that it was necessarily but

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a partial report, inasmuch as all the members of the bureau were not present. He understood that they were on their way here, and when they arrived no doubt their papers would be presented. The subject selected by the Bureau of Surgery was the *Surgical Diseases of the Genito-Urinary Apparatus*, and a number of papers would be read and, he hoped, thoroughly discussed. He greatly regretted, he said, that he was unable to present, even by title, all the papers of the bureau, and, indeed, he believed that some of the papers had not yet been prepared although a year had elapsed since the bureau was appointed, but were in course of preparation while the writers are on their way to the meeting. He could not believe that papers prepared in this way could present the best thoughts of the writers, or do justice to them or to the Institute. The *Transactions* is looked upon as a volume expressive of the best thoughts and the best practice of the homœopathic school, and he was of the opinion that papers for publication therein should be written with the greatest care. There seemed to be something radically wrong in the construction of bureaus where anything short of this is allowed.

The Bureau of Surgery then presented the following papers:

Lithiasis;* by I. T. TALBOT, M.D., of Boston.

Lithotrity; by A. G. BEEBE, M.D., of Chicago. (Section V, Art. XXXII.)

Phimosis and Paraphimosis; by W. M. L. FISKE, M.D., of Brooklyn, New York. (Section V, Art. XXX.)

Eneuresis;* by N. SCHNEIDER, M.D., of Cleveland, Ohio. (Section V, Art. XXXII.)

Impotence and Satyriasis; by J. G. GILCHRIST, M.D. (Section V, Art. XXXI.)

Organic Stricture of the Urethra, and its Treatment; by E. C. FRANKLIN, M.D., of Ann Arbor, Michigan. (Section V, Art. XXXIII.)

On Retention of Urine and Catheterism; by M. O. TERRY, M.D., of Utica, New York. (Section V, Art. XXXIV.)

Benign and Malignant Tumors of the Urinary Bladder; by

* Papers marked with an asterisk were not received by the General Secretary.

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L. H. WILLARD, M.D., of Allegheny, Pennsylvania. (Section V, Art. XXXV.)

Hydrocele; by JOHN E. JAMES, M.D., of Philadelphia. (Section V, Art. XXXVI.)

Nephrotomy; by GEORGE A. HALL, M.D., of Chicago. (Section V, Art. XXXVII.)

Vesico-Vaginal Fistula from Syphilis; by S. R. BECKWITH, M.D., of Cincinnati, Ohio. (Section V, Art. XXXVIII.)

The papers of the bureau, after having been read, were discussed at some length, after which they were accepted and referred to the Committee of Publication, and the bureau was declared closed.

D. H. BECKWITH, M.D., of Cleveland, Ohio, offered the following resolution, which was agreed to:

Resolved, That the Auditing Committee be and they are hereby instructed to examine the accounts of the Treasurer, in relation to the money raised for the World's Homœopathic Convention, its amount, and the disposition made of the same.

Report of the Board of Censors.

F. R. MCMANUS, M.D., Chairman of the *Board of Censors*, then submitted the names of a number of applicants for membership. Upon these, he said, the board had acted favorably, and he requested that the applicants be admitted to membership, which was accordingly done by a unanimous vote.

BUREAU OF ANATOMY AND PHYSIOLOGY.

H. B. VAN NORMAN, M.D., of Cleveland, Ohio, presented the report of this bureau. He stated that he had but a single paper to present, written by himself. He said he was unable to get responses from other members, although he expected other papers before the close of the session.

DR. VAN NORMAN then read his paper, entitled *Hereditary Descent*. (Section VII, Art. XXXII.)

This paper was briefly discussed by William Owens, M.D., of Cincinnati, and N. R. Morse, M.D., of Salem, Massachusetts, after which it was referred to the Committee of Publication, and the bureau was declared closed.

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THE PRESIDENT: The next business in order will be the presentation of the report and papers of the

BUREAU OF PSYCHOLOGICAL MEDICINE.

T. L. BROWN, M.D., of Binghamton, New York, announced that his bureau would present the following papers:

Impediments to Brain Function in Melancholia; by W. M. BUTLER, M.D., of Middletown, New York. (Section VIII, Art. XIV.)

General Paresis; by SELDEN H. TALCOTT, M.D., of Middletown, New York. (Section VIII, Art. XV.)

A Case of Hysterical Delusion; by N. A. PENNOYER, M.D., of Kenosha, Wisconsin. (Section VIII, Art. XVI.)

Psychological Manifestations of Physiological Disease; by GEO. W. MOORE, M.D., of Springfield, Ohio. (Section VIII, Art. XVII.)

The Physical Relation of Mental Disease; by TITUS L. BROWN, M.D., of Binghamton, New York. (Section VIII, Art. XVIII.)

DR. W. M. BUTLER read his paper entitled *Impediments to Brain Function in Melancholia.*

DR. SELDEN H. TALCOTT then read his paper entitled *General Paresis.*

Pending the reading of Dr. Talcott's paper, the hour of adjournment arrived, whereupon the Institute adjourned, with the understanding that the bureau should be continued, and that Dr. Talcott should finish his paper.

EVENING SESSION.

PRESIDENT WESSELHOEFT called the Institute to order at eight o'clock, and announced the appointment of N. SCHNEIDER, M.D., of Cleveland, O., to be *Chairman of the Bureau of Surgery*, and H. B. VAN NORMAN, M.D., of Cleveland, O., to be *Chairman of the Bureau of Anatomy and Physiology.*

DR. TALCOTT then resumed the reading of his paper, after which Dr. T. L. Brown had the papers of Drs. Moore and Pen-

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noyer referred to the Committee of Publication, without reading, the writers being absent.

DR. T. L. BROWN then read his paper on the *Physical Relation of Mental Disease.*

The papers of the bureau were then referred to the Committee of Publication. They gave rise to considerable discussion (see Section VIII, Appendix), after which the bureau was declared closed.

T. P. WILSON, M.D., of Cincinnati, O.: *Mr. President and Gentlemen and Ladies:* We have among us, as you know, a distinguished member of our profession and school, from England, DR. ALFRED C. POPE. He has been presented to us, but we have not yet had the pleasure of hearing from him. I am informed that he has very kindly consented to read a paper before the Institute, if some special hour is assigned to him. I therefore move that Friday, at eleven o'clock, be specially set apart to hear Dr. Pope's paper.

Dr. Wilson's motion was amended to make the special order for Thursday, at eleven o'clock, and was agreed to as amended.

THE PRESIDENT then called for the reports of the *Committee on the Law of Cure*, Dr. Thomas Moore, of Philadelphia, Chairman, and the *Committee on Clinical Thermometry of Puerperal Diseases*, Dr. Henry N. Guernsey, of Philadelphia, Chairman, but the Secretary announced that neither of these gentlemen were present, and that no reports had been furnished from either committee.

Report of the Yellow Fever Commission.

It was moved, and, after considerable discussion, carried, that the regular order of business be suspended to allow the Institute to hear the report of the Yellow Fever Commission.

J. P. DAKE, M.D., of Nashville, Tenn., on behalf of the chairman of the committee, Dr. W. H. Holcombe, of New Orleans, then presented the report, which was accepted and referred to the Committee of Publication. (Section I, Art. LXXII.)

THE PRESIDENT then announced the next business in order as the

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Report of the Committee on a Homœopathic Dispensatory.

T. F. ALLEN, M.D., of New York: I believe, Mr. Chairman, that it is the first time that I have been obliged to apologize for the non-performance of a duty. I beg to call to your mind the circumstances under which this *Dispensatory* was left to me as a legacy. At the time of Dr. Dunham's death I became chairman by virtue of succession, being second on the list. I wrote to the Secretary of the Institute to obtain the manuscript which I knew existed in considerable quantity. Dr. McClatchey knew nothing about it. It had not been sent to him. Failing to obtain it from the Secretary, I endeavored to obtain it from the late Mrs. Dunham. She knew nothing of it. It could not be found among the doctor's papers. Last year, not being able to be present, I sent in a report embodying that statement, and resigning my position as chairman of the committee. I was unaware until last week, when I received the programme of this meeting, that I was still held responsible to report concerning the Dispensatory. I received no notice that my resignation was not accepted. I supposed that I had nothing further to do with it, and gave myself no further trouble about it. About a week or ten days ago, sir, by mere accident, in conversation with a member of this committee, I discovered that the papers were in his possession. The Secretary of the Institute learned on Saturday only where the papers belonging to this committee were, and then requested that they be sent to me; and just before leaving New York I received the first volume of the scrap-books. There were eight volumes, containing the work of the committee. I suppose that they can all be had by a future chairman of this committee. It is exceedingly annoying to me to be obliged to make such a report about this matter. This Dispensatory has hung along from year to year. An immense amount of work has been done. There are many who want it. The work should be pushed to completion, and it is a pity it cannot be. Dr. Dunham went to a great deal of expense to obtain foreign journals, Spanish and Italian, and out-of-the-way journals, in order to write up the literature of our drugs, and make it as complete and good as he could. He did a great deal of work upon it.

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The pharmacy, I think, has been largely written up. The chemistry also. I know Dr. Mitchell did his share of it. I think Dr. Dunham completed another portion of the chemical part. Dr. McClatchey contributed to it. All the members, I believe, have done the most of their work, and Dr. Dunham kept all in eight scrap-books, in which the work of the whole committee was embodied. They are still extant, I am glad to be able to tell you. I supposed it was lost among other papers. The work being in such a state, I hope, Mr. President, you will appoint some one as chairman of the committee, for I must beg to withdraw from that position. I hope some one will take hold of it and push it to completion. That is all the report I have to make, sir.

The report of Dr. Allen was, on motion, accepted, and the President announced that as the committee was a standing one, no further action was needed now. In regard to the question of chairmanship, it could be settled hereafter.

THE PRESIDENT then called for the

Report of the Committee on Foreign Correspondence,

but there was no response.

DR. BUSHROD W. JAMES, of Philadelphia, then moved that a report be received from

The National Board of Health,

which, after considerable discussion, principally with reference to the order of business, was agreed to.

TULLIO S. VERDI, M.D., of Washington, D. C., a member of the National Board of Health, then addressed the Institute as follows:

Mr. President, Ladies, and Gentlemen: You are all acquainted with the history of the creation of the National Board of Health. It is an outcome of the recent epidemic of yellow fever. It is the first time in the history of this country that there has been any national sanitary organization. During this terrible epidemic the absence of such an organization was felt very severely. I suppose that you are all acquainted with the legislation, as it took place in Congress, out of which came this board

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of health. It is one of the duties of this board, made so by law, "to obtain information upon all matters affecting the public health, and to advise the civil department of the government and the commissioners of the District of Columbia," etc.

The National Board of Health met at Atlanta, because the American Medical Association met there at that time, and the several sanitary organizations of the old school, for the purpose of general consultation. Having done so, a week ago I introduced a resolution in the National Board of Health, as follows: That "whereas the American Institute of Homœopathy will meet at Lake George on the 23d of June, therefore be it resolved that the National Board of Health adjourn to meet at Lake George upon the 23d of June." I knew at the time that the business we had in hand was so pressing that it was impossible for the whole board to adjourn for that purpose. However, the board was not only willing but desirous that I should come here and present to you their wishes and consult with you as to the future legislation regarding a permanent national health organization. So they sent me here to inform you of the work that has been done and to ask your co-operation individually and collectively in the work that will be done in the future. The National Board of Health recognizes no schools of medicine. It recognizes all educated men, all men engaged in the preservation of the health and the life of the people. All are regarded in the same light and in the same manner. They have issued circulars, and circular No. 3, which I have placed already on the chairs, many of you have seen, showing the purposes of the labors which are before us.

Besides advising with all the sanitary authorities in this country, it became necessary to make rules and regulations regarding the quarantine for the prevention of the introduction of infectious and contagious diseases. The object of such regulations is to keep a careful watch over American ports with a view to the sanitary condition of the merchant vessels travelling from over the ocean and coming to our shores.

The National Board of Health have also issued a little book, which you probably have seen, in which they request physicians to take notice of the mortality from infectious and contagious dis-

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cases, and to report to the board. These reports have been issued in blank form, so as to be available and easy of access, and in such form, that the physician can carry one in his pocket and even write on it in pencil. They have also issued postal cards for a similar purpose, in order to get information which will enable us to have statistics that are perfectly reliable.

Now, what I have to say to you regarding your connection with this National Board of Health is this. That it will be, and it ought to be, the duty of all of us, as homœopathic physicians, to take an interest in national sanitation. And I hope that our homœopathic physicians will present to the National Board of Health such reports as they ask for. I want it to appear there that homœopathic physicians are as much interested in national health as any other physicians, if not more so. I hope our reports will be thorough, so as to give knowledge that will be satisfactory. I think that this will be a movement by which those old prejudices and so on, and the contemptible idea that they have of our own ignorance, will be permanently dissipated. I hope you will all take interest in this matter, as your co-operation is really and sincerely asked, and particularly in suggesting proper legislation for the formation of a permanent national organization. Your opinions will be as respectfully received as the opinions of any other sanitarians in the land.

On motion the report was accepted.

THE PRESIDENT: The time for adjournment has now arrived.

The Institute then adjourned to meet on Wednesday morning at nine and a half o'clock.

SECOND DAY.

MORNING SESSION.

THE PRESIDENT called the meeting to order at ten o'clock, and announced the following appointments:

SELDEN H. TALCOTT, M.D., of Middletown, N. Y., to be *Chairman of the Bureau of Psychological Medicine* for the ensuing year.

HENRY M. SMITH, M.D., of New York, *Chairman of the Committee on Medical Literature.*

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JOHN J. MITCHELL, M.D., of Newburgh, N.Y., *Chairman of the Committee on a Homœopathic Dispensatory.*

WILLIAM H. WINSLOW, M.D., of Pittsburg, Pa., *Chairman of the Committee on Foreign Correspondence.*

THOMAS MOORE, M.D., of Philadelphia, *Chairman of the Committee on the Law of Cure.*

HENRY N. GUERNSEY, M.D., *Chairman of the Committee on Clinical Thermometry in Puerperal Diseases.*

ASA S. COUCH, M.D., of Fredonia, N. Y.: I desire to occupy the time of the Institute for a few moments by the introduction of some resolutions, which, I think, it will be both proper and politic for the Institute to adopt. They have been prepared by my friend, Dr. J. J. Mitchell, of Newburgh, N. Y., and I wish him to have all the credit of their preparation. They are as follows:

"The American Institute of Homœopathy, recognizing the importance of the work accomplished by the commission appointed by its President for the purpose of investigating the yellow fever epidemic of 1878, and deeply impressed by the gratifying results of the treatment of this disease under the homœopathic law, would resolve that the thanks of the Institute are due and are hereby tendered to the physicians comprising the Homœopathic Yellow Fever Commission for their prompt response to the call of our President, for their faithful services, and for the concise and thorough report which they have presented to us of their labors.

"And 2d. Whereas Mrs. Elizabeth Thompson, of New York, in addition to her other magnificent benefactions, furnished the commission with the funds requisite to secure their researches and to prepare their report; therefore

"*Resolved*, That a committee of five be appointed by the President of the Institute to convey to Mrs. Thompson an expression of thanks for the well-timed and generous pecuniary aid given to our commission. And further be it

"*Resolved*, That Mrs. Elizabeth Thompson is hereby made an honorary member of the American Institute of Homœopathy.

"3d. Whereas the American Institute of Homœopathy recognizes the importance of an organization for the prevention as well as the cure of disease; and whereas it recognizes in the formation of the National Board of Health the first step to the more thorough and successful effort in this direction; therefore

"*Resolved*, That the American Institute of Homœopathy, as far as possible, sympathize and co-operate with the National Board of Health in their efforts to advance the cause of sanitary science in this country."

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I move the adoption of these resolutions.

The motion was seconded by several.

THE SECRETARY: I see by this motion that it is intended to make Mrs. Elizabeth Thompson an honorary member. Our by-laws provide for honorary members and for their election, but they provide that honorary members shall be chosen only from distinguished foreign physicians.

DR. VERDI: If there is any way by which this can be accomplished it would be exceedingly gratifying to me, and I have no doubt to Mrs. Thompson also. When I appealed to Mrs. Thompson for aid when this commission was appointed there was not one dollar provided for its expenses. Every physician connected with the commission would have been obliged to undergo a very large expenditure of money besides the already great sacrifices they were to make in these researches. She was ready at once to assist and give aid to this commission for the work that had been done. The American Sanitary Association, composed of scientific men and of rich men, passed a vote of thanks to Mrs. Thompson, and she should have been made an honorary member of that association. If it is possible in any way to do this thing I shall be exceedingly gratified.

DR. N. R. MORSE: I believe there is no difficulty in the way of making her an associate member of this Institute.

THE SECRETARY: I believe it is the privilege of anybody to amend the by-laws by a vote. We may amend the by-laws in such a manner as to meet this case; I therefore suggest that the by-laws be so amended.

THE PRESIDENT: Will you hear the Secretary on this point?

THE SECRETARY: Section 4, article 5, of the by-laws prescribes that "the Institute may, at any annual meeting, elect as honorary members, not to exceed five in one year, any foreign physicians who may be judged worthy from their superior attainments in medicine; provided that the names of persons proposed for honorary membership shall have been presented at a previous annual meeting. Such honorary members shall have all the privileges of members except voting and eligibility to office."

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You will see from this that the nomination of honorary members is to be made at least one year before their election. It was evidently the intention of the Institute to apply honorary membership as a reward for distinguished services to physicians who could not otherwise become members of this body. Now, it is possible, of course, to amend these by-laws so as to include this lady, and elect her to honorary membership. But would it not be better to create a new by-law, or to pass a resolution to the effect that the office of associate member shall be created for the purpose of conferring Institute membership upon persons who have been of service to the cause of homœopathy, and make this lady, Mrs. Thompson, the first member of this new fellowship?

DR. VERDI: I make such a motion as will embody the Secretary's idea.

THE CHAIR: You have heard the resolution which embraces a resolution to make Mrs. Elizabeth Thompson an "Associate Member" of this Institute.

THE SECRETARY: It should be in the shape of an amendment to the resolution offered by Dr. Couch.

The question occurring on the motion to amend, it was agreed to.

The resolution offered by Dr. Couch, as amended, was then unanimously adopted, with applause.

I. T. TALBOT, M.D., of Boston: I move that the Secretary be requested to draw up an article defining what an "Associate Member" is, that it may appear in our Proceedings next year.

DR. MORSE: I second that motion and make one suggestion. It was suggested such membership be conferred on one who had done service in the cause of homœopathy; I would also include those who have done service to the cause of science and are benefactors of mankind, and have distinguished themselves as such.

THE PRESIDENT: You have heard the motion of Dr. Talbot to have the Secretary draw up a by-law, a resolution, defining what an "Associate Member" is, in order that people outside may know what we have done.

The motion was then agreed to.

THE SECRETARY: There is a committee of five to be appointed under these resolutions.

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THE CHAIR: How shall that committee be appointed?

VOICES: By the Chair!

THE CHAIR: The committee will consist of Asa S. Couch, M.D., Fredonia, N. Y.; N. F. Cooke, M.D., Chicago, Ill.; I. T. Talbot, M.D., Boston; B. W. James, M.D., Philadelphia; J. H. McClelland, M.D., Pittsburg, Pa.

THE PRESIDENT: Before resuming the regular order of business, I make a request that Dr. McManus, who is anxious to have the privilege of addressing the Institute for a short time on a subject which concerns him and us all very nearly, be allowed the privilege of addressing us after the excursion on the lake. (Applause.) I make this request in his behalf with a great deal of pleasure.

The next business now in order is the report of the

BUREAU OF GENERAL SANITARY SCIENCE, CLIMATOLOGY AND HYGIENE.

BUSHROD W. JAMES, M.D., of Philadelphia, Chairman of the Bureau, then made the following report:

Mr. President: The bureau which I have the honor to be chairman of issued a circular, and sent that circular to 3756 persons, and a special letter to 375 towns and cities in the United States, *i. e.*, to their boards of health, asking information in regard to the best methods of drainage known to them, and any improvements that may have been undertaken by them. They also sent out about 4000 bureau circulars, and in reply to these received a number of communications. From these I have prepared a paper which I will present to you in brief presently. We have quite a number of papers, for you will bear in mind that our bureau comprises three distinct departments,—General Sanitary Science, Climatology, and Hygiene. Some of these papers will be read by their authors, while others will simply be read by title for reference to the Publishing Committee. We have the following papers:

Utility of Boards of Health; by T. S. VERDI, M.D., of Washington, D. C. (Section XIII, Article XIII.)

Warming Our Homes; by D. H. BECKWITH, M.D., of Cleveland, O. (Section XIII, Article XIV.)

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The Drainage of Our Homes; by E. N. JONES, M.D., of Taunton, Mass. (Section XIII, Article XV.)

The Water-supply of Cities and Towns; by A. R. WRIGHT, M.D., of Buffalo, N. Y. (Section XIII, Article XVI.)

Our Relations to Boards of Health; by J. P. DAKE, M.D., of Nashville, Tenn. (Section XIII, Article XVII.)

Observations on Some of the Improvements in House and City Drainage; by BUSHROD W. JAMES, M.D., of Philadelphia. (Section XIII, Article XVIII.)

Blake's Maxims Concerning Sewer Gases; submitted by BUSHROD W. JAMES, M.D., of Philadelphia. (Section XIII, Article XIX.)

A Description of the Cleveland Homœopathic Hospital; by D. H. BECKWITH, M.D., of Cleveland, O. (Section XIII, Article XX.)

A Few Remarks on the Climate of California; by F. F. DE DERKEY, M.D., of San Francisco. (Section XIII, Article XXI.)

Ventilation of Soil and Waste-pipes and Underdrains; by HORACE M. PAINE, M.D., of Albany, N. Y. (Section XIII, Article XXII.)

The Relation of Defective Drainage to Diphtheria; by GEO. F. HAND, M.D., of Binghamton, N. Y. (Section XIII, Article XXIII.)

A number of these papers were read, and some of them were discussed more or less at length, as they were read, and a share of them were illustrated by charts, drawings, etc. Much interest was manifested in the subject, and the bureau took up nearly the entire session. Several papers were merely read by title and appropriately referred. Finally, at the close of the discussion (see Section XIII, Appendix), all the papers were accepted and referred to the Committee of Publication, and the bureau was declared closed.

JOHN W. DOWLING, M.D., of New York, *Chairman of the Committee of Arrangements*, then announced to the members that the Committee of Arrangements and the New York State Homœopathic Medical Society had arranged for a ride on Lake George, at 5 o'clock in the afternoon, in the steamer "*Horicon*,"

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and other entertainments for members and those who were with them at the meeting. Dr. Dowling's remarks were received with great applause.

Report of the Board of Censors.

DR. MCMANUS made a supplementary report from the *Board of Censors*, by which a number of applicants for membership were presented for the favorable action of the Institute. A motion was made that they be elected to membership, whereupon Dr. C. Pearson, of Washington, D. C., objected to one of the applicants upon the ground that he was not a homœopathist, and that he rejected Hahnemann's *Organon* as the foundation of homœopathy. After some discussion, the motion to elect all those recommended by the board was adopted. (See *Complete Report of the Board of Censors.*)

THE PRESIDENT: The next business in order will be the

Reports of Homœopathic Colleges.

THE SECRETARY reported that he had had blanks printed, in accordance with the instructions of the Institute, and had sent them to all the colleges. He had received these blanks, filled, from nearly all of these institutions in the country, but it was a mass of statistics that would prove to be very dry reading, and he hoped that a motion would be made to refer them to the Intercollegiate Committee to examine and report on them at some future time.

This motion was agreed to.

DR. T. P. WILSON stated that the dean of the University of Iowa Medical Department informed him that he had not received a blank from the Secretary. He therefore moved that he be allowed to send his report to the Secretary.

Agreed to.

THE PRESIDENT: The next business will be the presentation of the papers of the

BUREAU OF MICROSCOPY AND HISTORY.

C. P. ALLING, M.D., of Bradford, Pa., presented the report and the following papers:

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The Microscope in Practical Medicine; by W. H. WINSLOW, M.D., of Pittsburg, Pa. (Section XIV, Art. V.)

The Triturations of Aurum Metallicum; by J. EDWARDS SMITH, M.D., of Cleveland, Ohio. (Section XIV, Art. VI.)

On the Germ Theory of Diseases; by C. P. ALLING, M.D., of Bradford, Pa. (Section XIV, Art. VII.)

These papers were read and accepted. Dr. Smith's paper was received with hearty applause. A brief discussion followed, whereupon the Institute adjourned to meet at three o'clock. (For discussion, see Section XIV, Appendix.)

AFTERNOON SESSION.

The Institute was called to order promptly at three o'clock by the Vice-President, N. F. Cooke, M.D., of Chicago.

THE VICE-PRESIDENT stated that those who wished to discuss still further the papers of the Bureau of Microscopy should be prompt and brief, and announced that he should adhere strictly to the rules in regard to speeches.

A short discussion then followed (see Section XIV, Appendix), after which the papers were referred to the Publishing Committee, and the bureau was declared closed.

At this point the President took the chair, and announced that the next business in order would be the presentation of the report and papers of the

BUREAU OF MATERIA MEDICA, PHARMACY AND PROVINGS.

J. P. DAKE, M.D., of Nashville, Tenn., then presented the report of the bureau, and announced the following papers:

Introductory Report of the Bureau; by J. P. DAKE, M.D., of Nashville, Tenn. (Section II, Art. X.)

History of Drug Attenuation in Homœopathic Practice up to the death of Hahnemann, with a Statement of its Objects and Methods; by J. P. DAKE, M.D., of Nashville, Tenn. (Section II, Art. XII.)

History of Drug Attenuation in Homœopathic Practice since the time of Hahnemann, with a Statement of its Objects and Methods, with especial reference to variations from those ap-

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proved by Hahnemann; by W. L. BREYFOGLE, M.D., of Louisville, Ky. (Section II, Art. XII.)

Means to be Employed in Drug Attenuation. What they Should Be, and the Dangers of Impurity; by LEWIS SHERMAN, M.D., of Milwaukee, Wis. (Section II, Art. XIII.)

The Limits of Drug Attenuation, or Proofs of Drug Presence in Attenuations above the Third Decimal, from the Standpoint of the Scientist; by SAMUEL A. JONES, M.D., of Ann Arbor, Mich. (Section II, Art. XIV.)

The Limits of Drug Attenuation, or Proofs of the Presence of Medicinal Power in Attenuations above the Sixth Decimal, from the Standpoint of the Therapeutist.*

The Objects and Methods of Hahnemann in Attenuating Medicines; by LEWIS SHERMAN, M.D., of Milwaukee, Wis. (Section II, Art. XV.)

Means Employed in Drug Attenuation; by MAGAN J. RHEES, M.D., of Wheeling, W. Va. (Section II, Art. XVI.)

The Dose and Degree of Attenuation; by CONRAD WESSELHŒFT, M.D., of Boston. (Section II, Art. XVII.)

Several of these papers were read, whereupon the Institute adjourned to meet on Thursday morning at nine o'clock.

THIRD DAY.

MORNING SESSION.

THE PRESIDENT called the Institute to order, pursuant to adjournment.

Amendment to by-laws.

THE SECRETARY: It will be remembered that the Secretary was instructed yesterday to draw up a by-law, purely for an associate membership, under which Mrs. Elizabeth Thompson, of New York, might be made a member of this body. I would, therefore, report the following, to be called Section 7, of Article V, of the By-Laws, and ask its adoption:

* Not received.—GEN. SEC.

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"Article V, Section 7. The Institute may at any annual meeting elect as honorary associates, not to exceed three in any one year, any persons, not members of the medical profession, who have in any way been of special service to science or humanity, and particularly those who have been special patrons of homœopathy; and said honorary associates shall have all the privileges of honorary members."

On motion of Dr. I. T. Talbot the proposed by-law was adopted.

DR. TALBOT: In accordance with the new by-law, I now move that Mrs. Elizabeth Thompson, of New York, be elected an honorary associate of this Institute.

Agreed to unanimously.

THE PRESIDENT then announced that he had made the following appointments:

A. R. WRIGHT, M.D., of Buffalo, New York, to be *Chairman of the Bureau of General Sanitary Science, Climatology and Hygiene* for the ensuing year, and

C. P. ALLING, M.D., of Bradford, Pennsylvania, *Chairman of the Bureau of Microscopy and Histology.*

THE PRESIDENT then stated that the Necrologist had a supplementary report to make.

HENRY D. PAINE, M.D., of New York, *Necrologist:* Since the report of the Necrologist was presented, I regret to say that I have heard of the death of two of our senior members, viz., Dr. J. S. Douglass, of Milwaukee, Wisconsin, and Dr. John Brainerd, of Washington, District of Columbia. I wish, in this connection, to offer the following resolution:

"*Resolved*, That the members of the American Institute of Homœopathy have heard with profound emotion of the death of their honored and revered associates, DR J. S. DOUGLASS, of Milwaukee, Wisconsin, and DR. JOHN BRAINERD, of Washington, District of Columbia, and desire to express their high appreciation of the character and worth of their former colleagues, and of their long and faithful service in the promotion of general practice, and homœopathy in particular."

DR. I. T. TALBOT: I rise to second the motion, and would call attention to the fact that Dr. Douglass was formerly President of this Institute.

The resolution was unanimously adopted.

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AMENDMENTS OF BY-LAWS.

On motion of Drs. Morse and Talbot, the by-laws were so amended as to have the Secretary elected for but a single year, and his salary five hundred, instead of for five years with a salary of one thousand dollars per year.

DR. MORSE also moved that the annual dues be reduced to three dollars, and that the by-laws be amended accordingly. On motion, however, this matter, after some discussion, was referred to the Auditing Committee to await the Treasurer's report.

DR. TALBOT called attention to the effort being made by the Bureau of Organization, Registration and Statistics, to obtain a correct list of members and delegates present, and requested the co-operation of the members.

THE PRESIDENT: We will now resume the regular business of the session, which will be the report of the

BUREAU OF MATERIA MEDICA, PHARMACY AND PROVINGS (*continued*).

THE PRESIDENT then called DR. HENRY D. PAINE to the chair, and presented his paper by synopsis.

On motion, the business of the bureau was suspended to hear the report of the Treasurer.

DR. E. M. KELLOGG, of New York, then submitted his report. (Section I, Art. LXIX), which was accepted, and referred to the Auditing Committee.

THE TREASURER then stated that the balance in the Treasurer's hands would be reduced by the *Transactions* of the past year, which had not been paid for, and the bill of which he had just received. He also made some further remarks showing the financial standing of the Institute, and that upwards of five thousand dollars was due by members.

D. H. BECKWITH, M.D., then presented the following report from the special committee appointed to consider the resignation of the General Secretary:

Mr. President, Ladies and Gentlemen: Your committee to consider the resignation of the General Secretary beg leave to

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report that we are not unmindful of the vast amount of work that has been so well done by our Secretary for several years; or that he has labored for the best interests and welfare of the Institute, and has sacrificed health, time, and money for its good; but owing to his many other engagements, and at his own urgent request, we recommend that the Institute accept his resignation, to take place January 1st, 1880. We would also report that from the knowledge gained from the Secretary, we feel assured that within the next four or five months the volumes of the World's Convention of 1876 and the *Transactions* of the present session will be ready for distribution.

On motion of DR. D. S. SMITH, of Chicago, the report was adopted.

The Bureau of Materia Medica, etc., was again taken up at this point, and its papers were discussed at considerable length (Section II, Appendix), after which the papers were referred, and the bureau declared closed.

Thanks to Dr. A. C. Pope.

DR. ALFRED C. POPE, of London, England, then read his promised paper in accordance with the special vote of the Institute. Dr. Pope was the frequent recipient of hearty applause during the reading of the essay. (See Section I, Art. LXXII.)

S. R. BECKWITH, M.D., of Cincinnati, Ohio: *Mr. President and Members of the Institute:* I rise for the purpose of offering the following vote of thanks to our honored guest:

"*Resolved*, That the thanks of this Institute are due and are hereby tendered DR. ALFRED C. POPE, of London, England, for his able, interesting and instructive address, and that a copy of the same be solicited for publication with the *Transactions*."

The resolution was adopted unanimously, by a rising vote, amid much enthusiasm.

DR. POPE replied in fitting terms, returning thanks for the kind and friendly spirit shown him by the Institute.

Committee on President's Address.

DR. T. P. WILSON, from the Committee on the President's Address, reported that the committee had considered the duties of their appointment, and would recommend, first, that the Insti-

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tute indorse the appointment of the Yellow Fever Committee; and, second, that the address be accepted and referred to the Committee of Publication.

Agreed to.

THE PRESIDENT: The next business in order will be the report of the

BUREAU OF CLINICAL MEDICINE.

CLEMENT PEARSON, M.D., of Washington, D. C., chairman of the bureau, announced the following papers:

On the Positive in Diagnosis by Temperature; by N. F. COOKE, M.D., of Chicago. (Section III, Art. LXXIII.)

The Curative Power of Potentized Medicines; by WM. GALLUPE, M.D., of Bangor, Maine. (Section III, Art. LXXIV.)

Cause and Effect; by CLEMENT PEARSON, M.D., of Washington, D. C. (Section III, Art. LXXV.)

These papers were all read, and after a brief discussion were accepted and referred to the Committee of Publication, and the bureau was declared closed.

Report of the Auditing Committee.

DR. J. P. DAKE, of Nashville, Tennessee, on behalf of the Committee to Audit the Treasurer's Accounts, etc., made the following report:

Your committee beg leave to report that they have examined the accounts and vouchers of the Treasurer, as reported to the Institute, and find them correct. We also desire to explain to the Institute, in regard to the "Centennial Fund," that at the meeting held at Lake Chautauqua, New York, the Treasurer made a full report of the amount of money received and then on hand for the expenses of the World's Homœopathic Convention, and that since that time the money has been kept with other moneys of the Institute, and no separate account has been kept, and the report made by the Treasurer shows *all* the moneys in his hands, from all sources. Over three thousand dollars have been paid out of the Centennial money for work done on the volumes, through Dr. Dunham, the Secretary, and others. It is proper that this explanation should be made, as some seem to have misunderstood the matter.

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In regard to the matter of the *annual dues* we would recommend that the amount be kept at five dollars. We agreed last year, when the dues were seven dollars, to cut them down this year to five dollars; and this has been done, since those who have paid this year have paid only five dollars. In the opinion of your committee the sum of five dollars will not bring us more than will be needed to defray current expenses, and it is not more than is paid for membership in other scientific bodies.

On motion the report was adopted.

ELECTION OF OFFICERS, ETC.

The Institute, in accordance with the rule, then proceeded to the selection of the time and place for its next meeting, and also with the election of officers.

A number of places were presented as suitable for the next meeting, and their various claims were advocated by different members, such as Milwaukee, Wis.; Waukeshaw, Wis.; Chicago; Put-in-Bay; Richmond, Va.; Long Branch, N. J.; Indianapolis, Newport, etc. Finally Milwaukee was selected.

In regard to the time of meeting there was a general feeling that the meeting should be held at least a week earlier than usual, and finally a motion to this effect was made and carried.

The next business in order was the election of officers, and the following were chosen:

President.

T. P. Wilson, M.D., ... Cincinnati, O.

Vice-President.

George H. Hall, M.D., ... Chicago.

General Secretary.

J. C. Burgher, M.D., ... Pittsburg, Pa.

Provisional Secretary.

James H. McClelland, M.D, . . Pittsburg, Pa.

Treasurer.

Edwin M. Kellogg, M.D., . . . New York.

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Censors.

F. R. McManus, M.D.,	Baltimore.
R. B. Rush, M.D.,	Salem, O.
D. S. Smith, M.D,	Chicago.
O B. Gause, M.D.,	Philadelphia.
Lewis Sherman, M.D.,	Milwaukee, Wis.

Dr. McManus submitted a supplementary report from the Board of Censors, whereupon those recommended were elected members.

The Secretary, on behalf of Dr. O. B. Gause, submitted the following preamble and resolutions:

"*Whereas*, the provision for the comfort and convenience of the members of the Institute and their families has never been more complete in all its details than at this present session; and

"*Whereas*, the burden of planning and executing the work necessary to bring this about has fallen upon Professor John W. Dowling, of New York; therefore

"*Resolved*, That the members of the Institute hereby express their appreciation of the indefatigable exertions and noble generosity, and the personal attention and unwearied kindness of Dr. Dowling to us and to each one of us during this session. And further be it

"*Resolved*, That we hereby tender to Dr. Dowling and his accomplished wife our sincere sympathy in their bereavement; and our prayer is that the Giver of all good may heal their hearts and restore joy to their household."

The preamble and resolutions were unanimously adopted by a standing vote.

The Institute then adjourned to meet on Friday morning at 9.30 o'clock, there being no further session on Thursday on account of the banquet and hop given in honor of the Institute.

FOURTH DAY.

MORNING SESSION.

The Vice-President took the chair at half-past nine o'clock.

Dr. T. F. Smith, of New York, offered resolutions affecting the reports of bureaus, in reference especially to their methods of presenting their reports and the time occupied by each.

This gave rise to a lengthy discussion, in which it was developed

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that some measures should be taken to secure a better method of reporting the bureaus. Finally the whole matter was referred to a committee consisting of the General Secretary, Dr. McClatchey, and Dr. T. F. Allen, of New York, to report at the next meeting.

F. R. McMANUS, M.D., made the final *Report of the Board of Censors*, and the persons recommended by the board were admitted to membership. (See *Complete Report of the Board of Censors.*)

THE PRESIDENT then made the following appointments:

W. H. JENNY, M.D., of Kansas City, Mo., to be *Chairman of the Bureau of Pædology* for the ensuing year.

A. R. WRIGHT, M.D., of Buffalo, N. Y., *Chairman of the Bureau of General Sanitary Science, Climatology, and Hygiene.*

C. PEARSON, M.D., of Washington, D. C., *Chairman of the Bureau of Clinical Medicine.*

DR. J. P. DAKE offered the following amendment to the By-Laws, Article III, Section 3:

"It shall further be the duty of the Secretary to send to each homœopathic journal published in this country, within two months after the adjournment of an annual meeting, a list of the officers for the ensuing year, and the members of its bureaus, and the titles of the subjects selected by said bureaus."

Agreed to.

DR. T. P. WILSON offered the following resolution, which was agreed to:

Resolved, That the General Secretary shall hereafter furnish to the homœopathic journals editorial copies of the *Transactions* of this Institute.

DR. VON GOTTSCHALK, of Providence, R. I., moved, and it was carried, that the daughters of the late Dr. George W. Swazey be presented with a copy of the forthcoming volume of the *Transactions* of the Institute.

T. P. WILSON, M.D., offered the following:

Resolved, That hereafter the order of exercises adopted by the Institute shall conform to the following general rules:

First. There shall be held one or more sessions of the Institute on each day of the annual session, commencing at 9.30 A.M. At which meetings there shall be transacted the regular business of the Institute, and there

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shall be presented also one or more papers from the bureaus, as hereinafter provided.

Second. The chairmen of the respective bureaus shall each present a paper at the general meetings of the Institute, which papers shall be read and referred to the bureau to which it belongs.

Third. The several bureaus shall hold daily sessions, full notification of which shall be given to the Institute. At these sectional meetings shall be transacted the scientific work of the bureaus, and each bureau shall report its work and deliver its papers to the Institute.

After some discussion the matter was referred to the committee appointed to consider and report on, at the next meeting, the best method of conducting the business of the Institute.

DR. ASA S. COUCH, on behalf of the committee to prepare and forward to Mrs. Elizabeth Thompson a letter expressing the action of the Institute, submitted the following report:

MRS. ELIZABETH THOMPSON.

MADAM: The American Institute of Homœopathy through the undersigned, a committee appointed for that purpose, desires to express its sense of your deeds in connection with the pestilence that so lately devastated our land.

Not alone on account of your generous defrayal of the expenses of the Yellow Fever Commission created by the Institute is it moved to this action; it recognizes that you originated the movement for the scientific investigation of that scourge of humanity, and that in this you have a higher claim to the character of true philanthropist, and a better basis for the respect of medical societies, who should best appreciate the nature of such an act. But both on account of your pecuniary contributions, without which its Commission must have failed of the fullest fruition of its labor, as well as your early and vigorous furtherance of the important work, the American Institute of Homœopathy feels impelled to place itself unmistakably upon record in behalf of *your example to the world.*

To this end it has been pleased to elect you its first *Honorary Associate Member*, under a new by-law created for the purpose. In addition to this, its records show a unanimous vote of thanks for your services to humanity and the Institute.

Sincerely hoping you may experience a measure of the satisfaction in receiving that we have in making these announcements, we have the honor to be, madam,

Sincerely, your obedient servants,

(Signed.) A. S. COUCH,
N. F. COOKE,
I. T. TALBOT,
B. W. JAMES,
J. H. MCCLELLAND,
Committee.

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The report was unanimously adopted.

DR. ALFRED C. POPE was then nominated by Dr. J. P. Dake for *Honorary Membership*. Under the rules this nomination could not be acted on until the next session.

DR. DAKE then moved that Dr. Pope be made a Corresponding Member, which can be done at once.

Agreed to.

BUREAU OF OBSTETRICS.

J. C. SANDERS, M.D., of Cleveland, O., presented the report of the bureau, and announced the following papers:

Adherent Placenta; by O. B. GAUSE, M.D., Philadelphia. (Section IV, Article LVII.)

Thrombus in Labor; by J. C. SANDERS, M.D., Cleveland, O. (Section IV, Article LVIII.)

Obstetrical Notes; by J. F. COOPER, M.D., Allegheny City, Penna. (Section IV, Article LVIX.)

Carcinoma of the Cervix; by C. P. CANFIELD, M.D., Titusville, Penna. (Section IV, Article LX.)

Stomatitis Materna; by MILLIE J. CHAPMAN, M.D., Pittsburg. (Section IV, Article LXI.)

Ecoyesis; by C. ORMES, M.D., Jamestown, New York. (Section IV, Article LXII.)

These papers were then read, and duly discussed. (See Section IV, Appendix.)

THE PRESIDENT then announced that DR. O. B. GAUSE, of Philadelphia, would be *Chairman of the Bureau of Obstetrics*, for the ensuing year.

The next called was the

BUREAU OF GYNÆCOLOGY.

DR. S. S. LUNGREN, Toledo, O., chairman, being absent, DR. C. ORMES presented a paper on *Ovarian Diseases and their Complications*. (Section XI, Article XV.)

Abortion and its Results; by S. R. BECKWITH, M.D., Cincinnati. (Section XI, Article XIV.)

There being no discussion, this bureau was declared closed, and THE PRESIDENT announced

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DR. S. R. BECKWITH, Cincinnati, as *Chairman of the Bureau of Gynæcology* for the ensuing year.

THE SECRETARY: I have been requested to present and read the following papers of the

BUREAU OF PÆDOLOGY.

The Symptoms and Treatment of Capillary Bronchitis; by S. P. HEDGES, M.D., Chicago. (Section XII, Article XXI.)

Lobar Pneumonia; by SOPHIA PENFIELD, M.D., Danbury, Conn. (Section XII, Article XXII.)

Catarrhal Pneumonia; by W. H. JENNY, M.D., Kansas City, Mo. (Section XII, Article XXIII.)

Infant Diet; by MARY A. B. WOODS, M.D., Erie, Pa. (Section XII, Article XXIV.)

On motion the bureau was closed, and the papers referred to the Committee on Publication.

THE PRESIDENT: The next business in order is the report of the

BUREAU OF OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY.

W. A. PHILLIPS, M.D., of Cleveland, chairman of the bureau, reported the following papers:

Follicular Conjunctivitis; by F. H. BOYNTON, M.D., New York. (Section IX, Article XXXIX.)

Phlyctenular Conjunctivitis; by W. A. PHILLIPS, M.D., Cleveland. (Section IX, Article XL.)

Purulent Conjunctivitis; by G. C. MCDERMOTT, M.D., Milwaukee. (Section IX, Article XLI.)

Diphtheritic Conjunctivitis; by C. H. VILAS, M.D., Chicago. (Section IX, Article XLII.)

Conjunctivitis Granulosa; by ALFRED WANSTALL, M.D., Baltimore. (Section IX, Article LXIII.)

Follicular Trachoma; by D. J. MCGUIRE, M.D., Detroit. (Section IX, Article XLIV.)

Tinea Tarsi; by W. H. WINSLOW, M.D., Pittsburg. (Section IX, Article XLV.)

Ophthalmia Neonatorum; by J. PARK LEWIS, M.D., Buffalo, N.Y. (Section IX, Article XLVI.)

On motion the bureau was declared closed, and discussion on

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the papers was announced to be in order (see Section IX, Appendix), after which THE PRESIDENT announced that

F. H. BOYNTON, M.D., would be chairman of the Bureau of Ophthalmology, Otology, and Laryngology for the ensuing year.

THE CHAIR: The next bureau in order is the

BUREAU OF ORGANIZATION, REGISTRATION AND STATISTICS, of which DR. TALBOT, of Boston, is chairman.

DR. B. W. JAMES, of Philadelphia: I move that we continue in session until the close of the Institute.

Agreed to.

DR. TALBOT: I will say that the Bureau of Organization, Registration, and Statistics has issued circulars to all the different societies, as far as they could learn of them, to State societies, regular societies, clubs, hospitals, dispensaries, journals, and institutions. The number is about one hundred and seventy-two. There have been represented seventy-five. They have also endeavored to keep, as far as they could, a record of the members present here. The list is not entirely perfect. Some have come and others have gone, but the number present of which we have the names is about one hundred and seventy-five. They have reported in various ways: some by simply sending in their names without any statistics; some by sending in the facts of their work done the past year; others by sending a delegate here. There are twenty-two organized State societies in this country. Of local societies and clubs, twenty-three have reported, with the names of their delegates, while there are a very large number which have not been reported. Of hospitals, fourteen have reported, and it is estimated that there are at least twenty-five hospitals in the United States of different kinds under homœopathic treatment. Of dispensaries, a very inconsiderable number have reported,—only nine,—while there must be at least thirty or forty in active operation. Of colleges, out of eleven in the United States, seven have reported. Of journals, out of twelve, five have reported. In running over the list some have reported but have not sent any delegates. We will omit the names of the delegates, with the exception of the one from abroad, viz., the British Homœopathic Society, of which Dr. Pope is the delegate.

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I would say it is very desirable indeed to have in our annual publication some information as to what is going on in our societies and institutions. It is a way of conveying to the whole community of physicians a knowledge which otherwise gets to a very limited number, and I look upon this bureau, if sustained by the members of the Institute, as one of great importance, not only to the profession but the whole community. I must ask for my successors, whoever they be, an earnest and careful effort of the physicians to report all the institutions of the country. There are several others that have been handed in just at this last moment that will be found in the report when made out in full. You can well see the importance of making out a full and complete report. It will be of great interest.

On motion the report was received and referred.

THE CHAIR: I have received, as President of the Institute, a request from Washington to furnish the Census Office with a list of the names of the presidents of all the homœopathic State societies in the United States, in order that they may be communicated with for the purpose of perfecting the statistics of deaths and births. I would combine this statement with the motion that the chairman of the Bureau of Organization, Registration, and Statistics be authorized and instructed to furnish such a list to that office at Washington.

DR. TALBOT: Before the closing of this bureau I have to say that I have received from Washington, from the Census Department, or rather the Census Department has sent here, blanks, which it wishes to have filled up by every physician of all the deaths that may occur in his practice from the 1st of June, 1879, until the 1st of June, 1880; this will be furnished with a stamped envelope to return it to Washington at the proper time. They have been furnished very extensively, that the members might receive them. I propose to offer the following resolution as coming from the American Institute of Homœopathy:

Resolved, That the American Institute of Homœopathy, recognizing the great importance of the effort on the part of the Superintendent of the Census to obtain reliable mortality statistics in the United States, warmly approves of the same, and urges upon every member of the Institute to assist him by furnishing returns in accordance with the forms prepared and forwarded by him.

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The above resolution was agreed to.

THE CHAIR then announced the appointment of F. H. BOYNTON, M.D., of New York, to be *Chairman of the Bureau of Organization, Registration, and Statistics* for the ensuing year.

THE SECRETARY then announced the receipt of a lengthy report from DR. T. S. VERDI, *Chairman of the Committee on Legislation*, which was referred to the Committee on Publication.

THE CHAIR: The report from the INTERCOLLEGIATE COMMITTEE is now in order.

I. T. TALBOT, M.D.: As chairman of that committee I would state that reports from the various homœopathic colleges have been presented. Your committee has striven to devise a plan to improve the *teaching*, to *elevate* the standard of education, and give a *uniformity* to it, though no definite conclusion has been arrived at as yet.

On motion the reports were received.

THE CHAIR: I will appoint Dr. T. S. VERDI, of Washington, as chairman of the *Committee on Legislation* for next year.

THE SECRETARY: Unfinished business and new business are now in order.

J. P. DAKE, M.D.: Mr. President, I have an amendment to offer to the By-Laws. It is to add Section XVII to Article VII:

> The election of officers for the ensuing year, and the determination of the next place for the meeting of the Institute, shall take place at twelve o'clock on the last day of the session.

Agreed to.

DR. TALBOT: I move you, Mr. President, that a vote of thanks be extended to the New York State Homœopathic Medical Society, for the effort which they have made to secure the comfort of the members and the success of this meeting. And to the Delaware and Hudson Canal Company and the Lake George Stage Company for their kindness extended to us in giving to the members a reduction of fares.

Agreed to.

DR. TALBOT: I move you that the thanks of the Institute be tendered to the retiring officers for the great efforts they have made for the success of this meeting, the courtesy and kindness

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which they have extended to all its members, and for the faithful manner in every way in which they have performed the duties of their office.

Agreed to.

THE CHAIR: Before the resolution of adjournment is repeated I would ask the privilege of expressing to the members of the Institute my thanks for the attention and patience they have had with the shortcomings of their chairman, and I retire with the hope that anything that may have been neglected on my part will be overlooked. (Applause.)

DR. COOKE: So does his Vice.

DR. MCCLATCHEY: So does the Secretary.

DR. TALBOT: I move you, sir, that the Thirty-second Session of the American Institute of Homœopathy be now dissolved.

Agreed to.

COMPLETE REPORT OF THE BOARD OF CENSORS.

ANDERSON, JOSEPH C., M.D., Mansfield, O., ...	Cleveland Hom. Coll. Hos., 1873.
BAILEY, EDWARD S., M.D., Chicago, Ill., ...	Hah. Med. Coll., Chicago 1878.
BARTON, JEDEDIAH MARCUS, M.D., Worcester, Mass.,	Hah. Med. Coll., Philadelphia, 1870.
BUNTING, HARRY M., M.D., Philadelphia, Pa., . . .	Hah. Med. Coll., Philadelphia, 1879.
CAMPBELL, ELIZA LADD, M.D., Attleboro, Mass., . .	Boston University School of Med. 1876.
CASSADAY, FRANK FISK, M.D., Stevens Point, Wis., .	Hah. Med. Coll., Philadelphia, 1879.
CUSTIS, J. B. GREGG, M.D., Washington, D. C., . . .	N. Y. Hom. Med. Coll., 1878.
DAKE, J. P., Jr., M.D., Nashville, Tenn., ...	University of Michigan, 1879.
DANFORTH, LOMIS L., M.D., New York City, ...	Coll. Phys. and Surg., New York, 1874.
FALLIGANT, LOUIS L., M.D., Savannah, Ga., ...	Hom. Med. Coll., Pennsylvania, 1857.
FLANDERS, MARTHA J., M.D., Lynn, Mass., ...	New England Female Med. Coll., 1861.
GIFFORD, WILLIS B., M.D., Attica, N. Y., ...	Med. Dep. Univ. Buffalo. 1876.
HARTSHORNE, DANA WARREN, M.D., Cincinnati, O.,	Harvard Med. Univ., Boston, 1854.
HAWKES, WILLIAM J., M.D., Chicago, Ill., ...	Hah. Med. Coll., Philadelphia, 1867.
HENDERSON, SARAH A., M.D., Sandusky, O., . . .	Cleveland Hom. Hosp. Coll., 1875.
HOAG, CLITUS S., M.D., Waterbury, Vt., ...	Hah. Med. Coll., Philadelphia, 1877.
HOLDEN, AUSTIN W., M.D., Glenn's Falls, N. Y., . .	Albany Med. Coll., 1848.
KERN, GEORGE W., M.D., Johnstown, Pa., ...	Hah. Med. Coll., Philadelphia, 1879.
KIRKLAND, WILLIAM H., M.D., Massillon, O., . . .	Cleveland Hom. Hos. Coll., 1878.
MARSHALL, JULIA A., M.D., Haverhill, Mass., . . .	Boston Univ. School of Med., 1877.
MCCLELLAND, JOHN B., M.D., Pittsburg, Pa., . . .	Hah. Med. Coll., Philadelphia, 1879.
MCCREA, PHILIP A., M.D., East Aurora, N. Y., . . .	Med. Dep. Univ. Buffalo, 1875.
MILLS, JAMES P., M.D., Chicago, Ill., ...	Hah. Med. Coll., Philadelphia, 1873.
MOSHER, CHARLES M., M.D., Easton, N. Y., ...	Albany Med. Coll., 1856.
OSBORNE, NEHEMIAH, M.D., Buffalo, N. Y., ...	Buffalo Univ. of Med., 1863.
PARSONS, KATE, M.D., Cleveland, O., ...	Cleveland Hom. Hosp. Coll., 1873.
PAYNE, GEORGE H., M.D., Boston, Mass., ...	Boston Univ. School of Med., 1875.
PAYNE, MARY A., M.D., Dover, N. H., ...	Boston Univ. School of Med., 1877.
PECK, GEORGE B., Jr., M.D., Providence, R. I., . . .	Yale Med. School, 1871.
POTTER, SAMUEL O. L., M.D., Milwaukee, Wis., . . .	Hom. Med. Coll., Missouri, 1878.
ROSS, ORRIN G., M.D., Revere, Mass., ...	Bowdoin Med. Coll., 1858.
SHANNON, SAMUEL F., M.D., Sewickley, Pa., ...	Hah. Med. Coll., Philadelphia, 1879.
SHERMAN, SARAH E., M.D., Salem, Mass., ...	Boston Univ. School of Med., 1876.
SLOCUM, ROYAL, M.D., Easton, N. Y., ...	Bellevue Hosp. Med. Coll., 1871.
SMITH, JUSTIN EDWARDS, M.D., Cleveland, O., . . .	Cleveland Hom. Hos. Coll., 1877.
STONE, MARTHA M., M.D., Cleveland, O., ...	Cleveland Hom. Hos. Coll., 1877.
SWARTZ, J. ROSS, M.D., Washington, D. C., ...	Hah. Med. Coll., Philadelphia, 1879.
TOOKER, ROBERT N., M.D., Chicago, Ill., ...	Bellevue Hosp. Coll., N. Y., 1865.
WEEKS, WALTER H., M.D., Lowell, Mass., ...	Boston Univ. School of Med., 1877.
WHITCOMB, FIDELIA J. M., M.D., Fonda, N. Y., . .	Boston Univ. School of Med., 1876.

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LXIX.

TREASURER'S REPORT.

Dr.	E. M. Kellogg, Treasurer, in Account with the American Institute of Homœopathy.	Cr.
To balance on hand June 20th, 1878,	$1861 51	Disbursements during past year:
" dues, etc., collected to June 21, 1879,	2826 00	By bill of Stenographer, $302 60
		" check to Sherman & Co., on account of Transactions of World's Convention, 1000 00
Total,	$4687 51	" salary of Secretary, 1000 00
		" Initiation Fee and Dues, taken by mistake and refunded, 22 00
		" bill for Engrossing Certificates, 4 50
		" " " new Ledger, 6 50
		" " of Crosscup & West, engravers, 45 00
		" " for printing Bill-heads, 4 50
		" " for Expressage, Telegraphing, etc., 20 90
		" Secretary's Bill for Postage, etc., 90 05
		" Treasurer's Bill for Postage, etc., 88 07
		" By bill of Sherman & Co., for printing, binding, etc., vol. of 1878, 1602 47
		$4186 59
		Balance on hand, 500 92
		Add unexpended balance in hands of Secretary, 394 23
		Total balance on hand June 21st, 1879, $895 15

**AUDITOR'S REPORT.*

The undersigned, Auditing Committee, have examined the accounts and vouchers of the Treasurer, from June 20th, 1878, to June 21st, 1879, and find them correct.

Attest: J. P. Dake, M.D.,
Henry D. Paine, M.D.,
Henry M. Smith, M.D.,
Auditors.

* For full report of the Auditing Committee, see pp. 55 and 56.

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THE POSITION OF HOMŒOPATHY AS A THERAPEUTIC METHOD.

By Alfred C. Pope, M.D, M R.C.S.E., London, Eng.

Mr. President, Ladies, and Gentlemen: The position which the doctrine of homœopathy holds in the opinion of the profession of medicine is a matter of the deepest interest to us, and one well worthy of our most serious consideration. It has often been reviewed before, but, as years roll on, the circumstances under which each review takes place differ from those which obtained when the previous study of the question was made. Hence I have thought that I might, with some propriety and perchance advantage, venture to lay a few thoughts regarding it before you this morning.

The day is approaching, it may yet be somewhat distant, but assuredly it is coming, when the law of similars will be the polar star of therapeutics to the entire body of practitioners of medicine. Already it is computed that one-eighth of the legally qualified members of our profession in your country are practicing homœopathy—openly practicing homœopathy that is—how many are doing so secretly no one can estimate. Here, as in England, the works of Bartholow, Ringer, Wood, and the *ci-devant* homœopathist, Charles Phillips, have done much towards preparing the mind of the profession to receive those therapeutic truths we have to teach them. This preparation has been effected by placing before practitioners the value, in small doses, of medicines which are homœopathic to the morbid condition in which they are prescribed—their curative power over which was first ascertained through the medium of the homœopathic law—was first made known by avowed students of homœ-

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opathy. It has been further advanced by the teachings of Lauder Brunton and others regarding the opposite actions of drugs; and it has been additionally strengthened by the method pursued by some of the most scientific, most industrious, and most trusted investigators of drug action—a method which differs little save as the progress of science has compelled a difference—from that pursued by Hahnemann when constructing his *Materia Medica Pura*. I do not believe it possible, provided we remain true to our principles, careful in practice, earnest and faithful in teaching that which we believe to be true, that so much good seed as has been sown in this way can fail to bring forth a most abundant harvest.

The large majority of the members of our profession are simply and solely practitioners of an art; they go their daily rounds prescribing that which they have been taught to prescribe—little heeding the basis, whether scientific or empirical, upon which their treatment rests. They have little time for study, and so long as their patients get well or are relieved in about the same proportion as those of their neighbor, they feel perfectly satisfied. They accept without a question or a thought all that the medical periodical to which they subscribe teaches them. It is because they have done so that they have long since concluded that homœopathy is a fallacy, and something worse,—a dangerous fallacy. They have made no inquiry into its principles or merits, and being fully occupied, have neither time nor inclination to do so. They therefore accept with much readiness the assurance of the editor of their favorite journal, that it is a worthless piece of quackery.

The majority, therefore, of medical men follow their leaders. They have their thinking done as some one said they have their washing,—out. It is not then to the general practitioner of medicine that we look for the first steps in any progress towards homœopathy, but to the professors and teachers in universities and medical schools. It is to the Bartholows, the Woods, the Ringers, and others that we turn, when we inquire how therapeutics is progressing, and in what direction the science is advancing. What they say to-day, the bulk of the profession in England and the American Union will practice to-morrow.

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It is because these men, and others in high places, are teaching homœopathy roughly, crudely, empirically, unscientifically it is true—but still teaching homœopathy—causing the absorption of the results of our practice among the physicians of the public—that I feel so much confidence—not in the ultimate triumph, for that is certain on much higher grounds, but on the more or less speedy triumph of those principles for the truth of which we have so long contended, and that through difficulties far greater than those who have entered the profession within the last few years, can have any idea.

Yet, again, it is because homœopathy is being taught in the manner I have described, empirically and unscientifically, that it is especially incumbent upon us, more so, perhaps, than it ever was, to be especially firm in our defence of the therapeutic truth we have found to be of such vast importance, alike to the physician and to those intrusted to his care—especially careful in our practice of it—especially earnest and faithful in our teaching of it.

The most conspicuous feature of the homœopathy, taught by the leaders of traditional medicine, is its empiricism. Its scientific basis is not recognized, or at any rate not admitted. As long as this recognition is withheld, the advantages the general practitioner of medicine has derived from our experience are in danger of being lost, just as in past ages many valuable bits of practice have been lost. To illustrate my meaning by a commonplace example. We have found through the law of similars that Ipecacuanha is curative of certain cases of vomiting. This has been picked up and found successful by our non-homœopathic brethren; they have accordingly leaped to the conclusion that a medicine which was remediable to some cases of vomiting, would necessarily be so to all! Failure inevitably follows in not a few instances, and presently the drug becomes discredited in all; the few successful cases in which it was tried are looked upon as *post hoc*, not as they really were *propter hoc*, and a fresh agent to cure vomiting is looked for. This, ladies and gentlemen, is empiricism. Homœopathy is not accountable for such failure, for homœopathy, as a scientific method, has not been tested. The scientific therapeutist looks not merely to the condition to be cured, but

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to the individual specimen of that condition. This individuality can only be ascertained by the symptoms which differentiate one instance of such a condition from another, and it is only by such individualization, both of disease and of drug, that curative results can be obtained. Ipecacuanha will not cure all cases of vomiting, some require Arsenicum, others Apomorphia, others Cocculus, and so on, and it is only by carefully studying the symptoms of each case, and of each drug, that we can ever hope to cure disease.

The scientific character of drug therapeutics consists then not merely in the application of the law of similars, but in its application with *precision*. It is this that we have yet to impress upon the minds of our medical brethren, who are acting, in the higher ranks of the profession I believe consciously, in the lower unconsciously, upon the homœopathic law.

I submit then that the law of similars has, if not accepted as true, been availed of practically. The fact that small doses are necessary when that law is acted upon has been, to all intents and purposes, admitted. The method of drug investigation, known as proving, has been adopted. What then remains? Chiefly this,—the individualization of remedies. This it is that we have to devote our energies to insisting upon as essential to a scientific therapeusis. Once this fact is recognized, once its importance is acknowledged, homœopathy pure and simple follows.

I commend then this principle of careful systematic individualization to your especial attention, not as something new, not as something of the value of which you are not all aware, but as that of which, in the hurry and routine of every-day practice, we all, and no one more so than myself, require to be reminded from time to time; and still more as that upon which, to a large, a very large extent, depends the future of homœopathy. Neglecting this, we make brilliant cures occasionally, and in a measure by chance; neglecting this, our influence upon the progress of therapeutics is diminished, the time when homœopathy shall be taught in every medical school in the land is postponed.

It is, ladies and gentlemen, a serious reflection, but it is one which we cannot evade, that the future progress of therapeutics—"the supreme end of our profession"—rests upon those members

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of our profession who have confessed their faith in homœopathy, and who profess to carry out this faith in their daily practice. Nothing succeeds like success. It was the success in curing disease obtained by those who went before us that induced us to investigate homœopathy; it was the success we achieved when investigating it that led to our adopting it as the basis of our therapeusis. It will be our success that will compel the further inquiry of those who have so far but touched the hem of the garment of homœopathy; it will be our success that will lead others who have hitherto refused so much as to ask what homœopathy means, that will lead them to do so.

Such success as this can only be obtained by the utmost care in prescribing, a care which necessitates the constant study of the Materia Medica, and the cautious individualization of disease and of drug.

But, in addition to the pains we devote to our daily work, it is essential that it be clearly and distinctly understood by all, that it is performed upon the basis of homœopathy.

To shrink from proclaiming the fact, that whatever success follows our endeavors to cure disease is due to homœopathy, is simply cowardice. It has been charged upon us that we use the words homœopathy, homœopathic, and homœopathist, simply as a means to attract a *clientele*. The charge is libellous. It is brought to deter men of sensitive minds from making known far and wide, that which those who make it desire to keep secret. In days gone by the recognized organs of professional opinion committed themselves to the assertion that homœopathy was false, that it was the baseless fabric of a vision, woven by a crack-brained enthusiast; and now, after we and others have spent years in earnest and successful work in the development of homœopathy, some who have, during those years, so committed themselves, are beginning—only beginning, remember—to discover that that which they have denounced as a tissue of error, has truth in it.

Of all kinds of food none is so indigestible as one's own words. This, those who have committed themselves, as I have described, feel, and feel acutely. We have no desire by frequent references to the past to add to their mental gastralgia, but that

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the law of similars is a fact in therapeutics of the greatest importance must be admitted. That it is to Hahnemann that we are indebted for the practical development of this law must be acknowledged. To insist on such admission is a duty we owe alike to the memory of the heroic dead, to science, and to ourselves. We cannot more thoroughly evince our determination so to insist, than by referring, in writing and in speaking, to the law of similars as homœopathy, to the method of practice based on that law as homœopathic, and to those physicians who endeavor to avail themselves in practice of this method as homœopathists. When the time comes that this law and this method are taught in all medical schools and medical textbooks, when Hahnemann is by the common consent of the profession assigned that pre-eminent position in the history of medicine to which he is entitled, these words will in great part fall into disuse, their *raison d'être* will have ceased, all members of the profession will then stand therapeutically upon a common platform. But until that time has arrived our distinctive doctrines must have a distinctive definition, and none is better, none more worthy of our constancy, than that which has for fully eighty years been applied to them.

Remembering the responsibility which I just now said attaches to us in the full development of homœopathy, it behooves us to be especially cautious in all we write and say regarding it. Nothing has been more detrimental to progress in the past than the tendency to rush into print, to publish as facts, statements which, a little time, a little more reflection, a little more investigation would have shown us were anything but facts.

I remember many years ago being very much delighted with the apparent recovery of a patient from a form of disease which I had always regarded as singularly obstinate if not incurable. I immediately sent a report of it to the *British Journal of Homœopathy*. The article containing it was scarcely published, when I learned that very shortly after the patient's last visit all the old symptoms returned and persisted until his death, some little while after. My chagrin may be more easily imagined than described, but it had the effect of rendering me very much more cautious than I had previously been in assuming

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the cure of a notoriously intractable form of disease. Even more needful, because the neglect of it is liable to be followed by more dangerous consequences, is caution in recording the effects of drugs upon the healthy. Nothing calls for more searching scrutiny, for the exercise of a more well-balanced skepticism, than do the records of provers. Dr. Constantine Hering has somewhere given an account of the plan pursued by Hahnemann in the examination of the daybooks of his provers. I forget at the moment where this account originally appeared, but for the purposes of reference, I may mention that it is quoted in an article on "Drug Proving," in the March or April number of the *Homœopathic Review* of this year. That account shows all the care and anxiety of a master-mind searching after truth, looking out for real facts, and examining into everything submitted to him without fear, favor, or affection. It is a model for our imitation.

Our Materia Medica is abundant in substances; we now possess a list of drugs a large proportion of which are of great value, but of those added since the days of Hahnemann, comparatively few have been proved as carefully and thoroughly as is desirable. Some, too, have obtained a position in our codices of Materia Medica, which have never been proved at all, or in a degree so slight that they are unworthy of the position which has been assigned to them. For young men anxious for distinction in the annals of science—and I trust that there are many such—there is no work that they can undertake which presents greater opportunities of usefulness, which will lead to higher honor, than the reproving, with the aid of modern instruments for giving precision to observations, of some of these imperfectly proved drugs.

Great, however, as is the responsibility which I have described, as resting upon the practitioner of homœopathy, and upon the recorder of therapeutic observations, whether clinical or experimental, upon none amongst us is it so weighty as on those who have undertaken the duties of educating the practitioner of the future. Medical education has during the last twenty years been revolutionized in England. It is scarcely more than twenty years ago since the examination for the diploma of the Royal

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College of Surgeons of England was confined to two subjects—anatomy and surgery—and limited to one hour. Now there is a preliminary examination in subjects of general literature, an examination of four days at the end of the second year, and another of four days at the termination of the fourth year of study. The two examinations comprising the entire range of medical study. This diploma, be it remembered, is the *minimum* license to practice. For the fellowship of the College an examination higher in the preliminary branches, and still more comprehensive and stringent in those which are professional, is demanded. It is from the fellowship of the College that its governing body is chosen, and the surgeons to our large hospitals are selected. I have named the College of Surgeons as my illustration of our progress, because twenty years ago it was perhaps more in the rear of the requirements of a medical education than either of the nineteen examining bodies, and to show what may be accomplished in a few years by way of improvement in a corporation so close and so regardless of professional opinion as this College was well known to be.

In the American Union are colleges for the education of students where all the professors are homœopaths. In England such institutions are impossible. But we hope and believe that ere very long we may find the homœopathic doctrine taught in the ordinary medical schools of our country. Meanwhile we have a school in London where homœopathy is taught, not for the purpose of granting a license to the student to practice, but to enable gentlemen whose medical education has, *quoad* homœopathy, been defective to complete it. It is yet young, and of its success it is premature to speak too much, but those who are interested in its welfare are, I may say, quite satisfied with the progress that it has made; in its teachers, Dr. Hughes and Dr. Dyce Brown, all have abundant reason to feel the fullest confidence.

To raise the standard of medical education, to increase the proficiency of our students, faithfully to set forth the doctrine of homœopathy, to illustrate it cautiously, carefully, and fully, are the especial duties of those amongst us to whom is confided the task, onerous but honorable, of educating the physicians of the future. Whatever may have been the deficiencies of your col-

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leges in the past, whatever degree of laxity in graduating young men may have been justified by the exigencies of a country comprising so vast an area, and populating so rapidly as is yours, the few days I have spent amongst you have shown me that you are alive to the necessity of providing better teaching, and of demanding higher qualifications before you will consent to admit a candidate to the ranks of the profession of medicine. Rely upon it, ladies and gentlemen, that in proportion as the education you give to your young men is complete and thorough, in proportion as you relentlessly refuse to grant diplomas to men or women who cannot pass a fairly stringent examination, will the progress of homœopathy be sound, healthy, and rapid amongst you.

In England we have come to recognize the fact that nothing is more calculated to deteriorate medical education than competition. It is not the college that has the greatest number of students, that can present the longest list of graduates at its annual commencement, that is of necessity rendering the greatest public service, but it is the college from which it is most difficult to graduate that has the highest reputation, that is rendering the most distinguished public service.

The number of colleges should, in my opinion, be limited to the wants of the community in which they are centred, and any multiplication of such institutions beyond this is, I think, to be regarded with very grave suspicion.

Ladies and gentlemen, I have no desire, neither have I any right, to touch upon any difference of feeling that may exist in some places amongst you, but I trust that I am not passing the bounds of courtesy in thus venturing to remind you of the great influence for good or for ill which your collegiate institutions must exercise upon the future of homœopathy, and, with as much earnestness as I am capable of, begging of you to spare no labor, to shrink from no investigation which may tend to render them a greater honor to homœopathy and a greater credit to the profession of medicine.

Finally, ladies and gentlemen, that homœopathy may as rapidly as possible be placed in that position which is its destiny, we must be a united body. Union and union alone is strength. And when I say union I do not mean uniformity. Union is feasible,

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uniformity impracticable. We may well be united in our endeavors to teach certain truths, but that we should all interpret them in precisely the same way is impossible. Nay, more, it is equally impossible that we should all accept as unimpeachable facts all statements put forward, in the best possible faith, as facts. "I was born a skeptic," said Trinks. Here was a man, whose mental organization was such, that, until he had viewed an assertion in every possible light, and it had stood the test of his examination, could not accept it as true, as a fact. Others again are so constituted that they will believe anything, provided it has about it a sufficiently *prima facie* air of probability. Between these two classes of mind we have every variety of impressionability. They are all represented among physicians who practice homœopathy, and there must be a *modus vivendi* established between them, or homœopathy will for a time, at any rate, sink out of sight. We all acknowledge certain cardinal facts. We know that medicines selected according to the law of similars are those most curative. We know that the action of drugs can only be ascertained by physiological experiment. We know that a similarly acting medicine must be given in a dose smaller than that requisite to excite its physiological action. In the practical application of these facts we differ, and by the very variety of our natures, our knowledge, and our abilities we must differ. One man may have so perfect a knowledge of the Materia Medica, and so complete a confidence in himself, that he may feel justified in never prescribing a palliative or mechanical remedy. In the agonies of cancer or the horrors of post-partum hæmorrhage he may be able calmly to compare the symptoms, and if his patient continues to suffer on the one hand, or loses her life on the other, he may be able conscientiously to feel that he has done all that art can do to relieve or save. Others less familiar with the Materia Medica or of a more anxious temperament will resort in such emergencies to the opiate or to ergot. Some there are who are perfectly satisfied with the provings of drugs upon human beings alone, others again demand that they should also be tested on the lower animals, in order that the actual tissues affected should be known. The experience of one physician may seem to tell him that the dose of a medicine is sufficiently

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small when it is less than is required to procure its physiological action, while another may think that he has seen better results from one so exiguous as to draw largely on the faith of his neighbor to believe that such a dilution had ever been prepared.

These, ladies and gentlemen, are simply matters of detail, questions upon which we must be prepared to differ, questions which men of sincerity and anxious only for the promotion of truth will, or at any rate ought to, discuss calmly and without personalities. When viewed alongside of the great fundamental principles which underlie them, they are of the smallest possible moment. There is nothing in them which ought to interfere with a united effort to press forward in societies, hospitals, and colleges the great doctrine of the law of similars.

Upon those who would exclude from our associations men who differ from them as to the occasional exhibition of an aperient as a palliative, who have greater confidence in the first dilution than the "cm," upon those who, on such grounds, will obstruct the work of hospitals or interfere with the establishment of colleges, a terrible load of responsibility rests. They are hindering the development of homœopathy, they are drags on the chariot wheels of medicine.

No, ladies and gentlemen, if we are in earnest, if we really desire the progress of the science, the practice of the art of which is the work to which our lives are devoted, we must cease from putting trivialities in the forefront of the battle, we must hark back upon first principles. As a stanch old foxhound will never allow himself to be diverted from the true line of his proper game by a hare crossing the scent, so we must ever remember that it is the great principle or law of similars that we have to contend for, that we have to press upon the attention of our non-homœopathic professional brethren, and we are failing in duty when we expend our energies in insisting upon the absolute necessity of adhering to some special dose, or even series of doses. *Ars longa, vita brevis.* We have a great work before us, and have no time to waste in bandying reproaches with brethren who do not come up to the standard to which we suppose that we have attained.

Homœopathy, the law of similars in the selection of medi-

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cines, is a great fact, proved to be so by an amount of experiment which has rarely, if ever, been adduced in support of any other scientific principle. It is not only a great fact, but it is a life-saving fact. We know it to be so. We are responsible for possessing that knowledge, and being so we are under obligations the most solemn to proclaim it to our professional brethren who know it not, in every way that will tend to extort from them an honest and careful investigation of its claims to recognition.

It is to this end that the American Institute of Homœopathy exists. It is to this end, in part, at least, that our hospitals have been established. It is to this end that our periodicals are published. It is to this end that our colleges are educating our young men.

Ladies and gentlemen, let each and all have your warm, active, and united support. And in so doing, as surely as to-morrow's sun will rise, so surely will you hasten the time when homœopathy will be universally acknowledged as the truth we all know that it is.

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LXX.

NECROLOGICAL REPORT.

By Henry D. Paine. M.D.,
Necrologist.

JEREMIAH T. DENISON, M.D., OF FAIRFIELD, CONN.

By the death of this venerable member the Institute has lost one of its most deservedly honored Seniors, and the profession one of its most distinguished landmarks in Connecticut. He was a native of New Haven, where his father, Captain Henry Denison, was for many years the honored President of the New Haven Bank, and was universally esteemed for his probity and urbanity. Dr. Denison received a thorough literary and classical education, graduating at Yale in 1824. Afterwards he spent some time in London and Paris, devoting his time to medical and surgical studies. His professional novitiate was subsequently pursued at the Medical School of his Alma Mater, and under the immediate direction of Professor Knight, into whose family he afterwards married.

Having received his doctorate in 1827 he began to practice at Warehouse Point, but in about two years he returned to New Haven, and became associated with his former preceptor. After a few years of practical experience under such favorable auspices he established himself permanently in Fairfield, where he continued till his death, April 25th, 1879, honored and beloved by all.

The claims of homœopathy arrested his attention about thirty years ago. The particular circumstances that induced him to investigate the principles of the new system are not now known,

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but it is remembered that the transition from the medical faith in which he had been bred to the new and unpopular methods of Hahnemann was not effected without a great struggle and much conflict of judgment, nor without arousing the rancor of prejudice and bigotry on the part of those with whom he had previously enjoyed the most friendly and cordial relations. He was not a man, however, to be deterred by considerations of policy or fear from following his reason and convictions.

After such an examination of the subject as satisfied him of the validity of the leading principles of homœopathy, he did not hesitate acting according to his conscience. He accepted the doctrine with fervor, and conformed his methods of treatment thereto. Nor did he ever express the least regret at the course he had pursued; on the contrary, it is said that he often deplored that he had not earlier become acquainted with the beneficent principles of the new school.

His conduct in reference to those who maligned him during the many years of opposition that he endured has been described as an example of dignified Christian forbearance. Conscious of his own rectitude, and of the truth of his opinions, he was content to wait with patience and confidence for their ultimate triumph.

He was elected a member of the Institute in 1851, and the same year assisted in the formation of the Connecticut Homœopathic Society, of which he was also the first President. For several years he has been upon the roll of Senior members, an honor which his character and labors had richly merited.

For several years past the increasing infirmities of age have obliged him to withdraw from active professional labor, but his interest in the cause of medical reform which he had modestly but firmly represented for so many years remained unabated.

J. S. DOUGLASS, A.M., M.D., PH.D., MILWAUKEE, WIS.

Dr. J. S. Douglass was born in the town of Westmoreland, Oneida County, New York, July 4th, 1801. His death occurred in August, 1878, in the little village called Macomb City, in Mississippi. His father was a pioneer farmer, a deacon of the Baptist

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Church, and a man of considerable influence. His mother was a woman of rare mental and moral qualities; her government, although strictly moral, was absolute.

The subject of this sketch in early life was feeble and delicate, and unable to work on the farm. He was fond of books, and acquired at the age of fifteen learning enough to teach a district school. He pursued in private a course of collegiate study with such success as to receive, in 1849, the honorary degree of Master of Arts, and in 1870 the honorary degree of Doctor of Philosophy, from Madison University.

He graduated in medicine at Fairfield Medical College in 1824. He commenced practice in Oswego, N. Y., gained a good practice, and married his first wife, Martha Pierson, who died three years after the marriage. He removed to Vernon, N. Y., and afterwards to Hamilton, N. Y. Here he married Miss Frances M. Boardman, daughter of Captain George Boardman, of Schenectady, and sister to the wife of Rev. George W. Eaton, President of the University.

During his residence in Hamilton he took up the study of homœopathy, and soon became an advocate and a practitioner of the principles of Hahnemann. Shortly after his conversion to homœopathy he removed to Milwaukee, Wis., where he did much to build up the popular faith in the homœopathic system. He published, in 1848, for one year, a monthly journal devoted to the advocacy of homœopathy among the laity. A few years later he published another, *The Expositor*, devoted to the same purpose. He published, besides many articles for the medical periodicals, a little work for the profession on *The Therapeutics of Intermittent Fever*, which is now out of print, and a popular treatise entitled *Practical Homœopathy*, which has reached its thirteenth edition. He wrote also a treatise on *Animal Magnetism*, in which he upheld the doctrine that there is a distinct force, or power, to which this name may be applied, and also a work on *Modern Spiritualism*, in which he contends that many of the phenomena relied on by the believers in that system as proofs of immortality are but manifestations of the natural force called animal magnetism, and the mental power called clairvoyance.

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In 1858 he accepted the chair of Materia Medica, Special Pathology, and Diagnosis in the Homœopathic Medical College of Cleveland, which he held for three years, retaining his practice in Milwaukee.

He has been a member of the American Institute of Homœopathy since 1847, once its President, and once the annual orator. In politics he was a Republican, and in religion orthodox and a member of the Baptist Church.

He had six children, all the offspring of his second wife, and all living except the eldest daughter. Mrs. Douglass still survives. Though advanced in years, she is yet active in the pursuit of literature and art.

Dr. Douglass was in some respects a remarkable man. He was a perpetual student. Next to the Materia Medica, botany was his choice. He collected a large herbarium before leaving New York State, and made extensive additions during his residence in Milwaukee. In company with Dr. Lewis Sherman, who was for several years associated with him in business, he made many pleasant excursions in search of rare or useful plants.

In 1872 he joined Dr. Sherman in the Milwaukee Homœopathic Pharmacy, which has grown to rank high in the estimation of the professon.

As a man Dr. Douglass was generous, kind, and genial; as a physician he was progressive, active, and untiring. The thought of pecuniary gain never seemed to influence his conduct. He was as ready to answer the calls of the poor as those of the rich. His large practice, which might have been sufficient to make another independently rich, only supplied the modest needs and pleasures of his family.

Dr. Douglass did important work in the introduction of new remedies to the homœopathic practice. He was one of the original provers of *Gelsemium*. A marked peculiarity of Dr. Douglass's mind was his readiness, or even eagerness, to accept new discoveries and new theories. He carried this to such an extent as to have it said by some, that he "rode hobbies." Nevertheless, this trait in his character, combined with natural enthusiasm and an excellent command of language, made him a useful teacher in Materia Medica.

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He was stricken with hemiplegia while in the active pursuit of his profession, and soon after removed to the residence of his daughter in Macomb City, Miss., where, after a year's illness, during which he made several little botanical excursions, and added new species, he was at last obliged to succumb, and go the way of all the earth.

He will be long remembered by his associates in the medical profession, for his works will live after him.

JEHU BRAINARD, A.M., M.D., OF WASHINGTON, D. C.

Jehu Brainard, A.M., M.D., was born in Johnson, Trumbull County, Ohio, 1807, and may, with justice, be termed not only a self-made man, but one of the greatest scientists of his time.

In 1828 he married the daughter of Rev. William West, of Youngstown, Ohio, and some time after, from dissatisfaction in the medical treatment of his child, his attention was called to the then little understood science of homœopathy, to which he gave a close and searching examination, and eventually became a convert to its principles and practice, and from that date his life was devoted to the study of science and medicine.

In the summer of 1844 he removed to Cleveland, Ohio, and became interested in the publication of several scientific works on natural history, geology, etc., in association with his friends and fellow scientists, Professor Hamilton Smith, now of Geneva, N. Y., Professor Samuel St. John, now of New York city, and Jared P. Kirtland, recently deceased. With the last-named gentleman Professor Brainard was on terms of great intimacy, and acknowledges his great indebtedness for valuable aid rendered to him in his youth in the pursuit of his studies. He edited the first agricultural paper ever published in Ohio.

In 1849 the Western College of Homœopathy was organized in Cleveland. Professor Brainard was one of its corporators, and on its full organization was elected a member of its faculty. He successively and ably filled the chairs of Botany, Medical Jurisprudence and Toxicology, Chemistry, Organic Chemistry, Microscopic Anatomy, and Histology. The continuance of his relation with this celebrated institution was not less honorable to the college than it was creditable to himself.

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In 1858, 1859, and 1860 he was Professor of Agricultural Chemistry in the Agricultural College of Ohio, and for the two last-named years was Professor of Chemistry in the Homœopathic College of Missouri. In all these important positions he acquitted himself of his duties with the highest honor to himself and his colleges.

From 1867 to 1870 he occupied the chair of Chemistry in the Woman's Homœopathic College of Cleveland.

In 1861 he removed to Washington City, and opened an office for the practice of medicine. On several emergencies, when the government called for volunteer surgeons, Dr. Brainard offered his services, which were gladly accepted.

After the close of the war, discovering that certain laws passed by Congress in 1838 worked oppressively against all who practiced homœopathy in the District of Columbia, he petitioned Congress for their repeal, being joined subsequently by other physicians; and mainly by his personal influence he not only succeeded in attaining the desired end, but procured a charter for the Homœopathic Medical Association of Washington City, thus giving to his profession a status in the District never previously possessed. At this time he was justly offered the position of President of this body, which position he accepted.

His publications are various. Of these we will mention: *The Influence of Narcotic Stimulants upon the Human System; The Chemical Constitution of the Stratified Rocks; On the Laws of Health and Physical Development; The Application of Steam Power in the Cultivation of the Soil; The Philosophy of the Homœopathic System of Medical Practice.*

At the time of his death he had in process of publication a work consisting of exhaustive papers upon various scientific subjects, which publication his family purpose to issue, as it shows his great originality of thought and his farseeing acumen more than any of his already published works.

In 1877 he married for his second wife Miss Janet Leslie Douglass, of New York.

His death, which occurred suddenly from disease of the heart, March, 1878, was thought to have been the result of his intense application to study, he being in the habit of spending many

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hours of the night in abstruse astronomical calculations, preparing papers for publication in scientific and medical journals of England and America, and also in making ready his last work for the press.

His worth as a scientist was recognized, not only from colaborers in his own country, but from scientific men in England, France, and Germany; and he was not only honored with diplomas from many institutions of high character, in recognition of his great learning, during his life, but since his death his family have been the gratified recipients of many tributes, not only of his great worth and attainments, but of his character as a helper to young and deserving students.

FRANKLIN WHITEHEAD HUNT, M.D., OF NEW YORK.

Few names in the annals of American homœopathic literature are more familiar to the members of the Institute than that of the subject of this notice. As author and editor he was widely known by means of his abundant labors for the dissemination of our therapeutical science. He was a man of extensive and varied acquirements, but ever diffident as to his merits, simple in his way of living, modest and unobtrusive in manners.

He was born, November 10th, 1810, in Wayne County, in what was then known as the Territory of Indiana. His father, General George Hunt, emigrated from New Jersey at an early date in the history of the West, and was one of the pioneers to the fertile White-water Valley of that extensive and now populous region, where, after acceptably filling various civil and military offices, he died in 1842.

His son, our late colleague, developed an aptness and strong inclination to study; a disposition not easily gratified under the circumstances by which he was surrounded. But by steady and untiring perseverance he overcame, in a large degree, difficulties that would have disheartened many other natures.

He was one of the earliest graduates from the Indiana Medical College, in 1833, in which institution he subsequently occupied the chairs of Materia Medica, Medical Jurisprudence, Medical Botany, etc., from January, 1841, to May, 1844. In 1846, and

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for a number of successive years, he represented La Porte County in the Indiana State Legislature. As chaiman of the Committee on Benevolent and Scientific Institutions he was an active and efficient advocate for the liberal support by the State of asylums, etc., for the deaf and dumb, the blind and the insane. In 1850 Dr. Hunt shared in the important work of modifying the laws in accordance with the requirements of the newly adopted State constitution.

It was during this period of his life that circumstances drew his attention to the claims of homœopathy. About 1852, after a protracted investigation, he announced his adoption of its principles, in the elucidation and dissemination of which he has ever since devoted much of his time and talents. Not long after this change in his medical opinions (about 1854) he removed to New York, where he engaged in practice, and in several literary and educational enterprises. He was elected a member of the Institute in 1857, and two years after assisted in the organization of the New York Homœopathic Medical College, in which he also creditably filled successively several different chairs for a number of years. In 1859 he was joint editor with Dr. E. E. Marcy of the *United States Journal of Homœopathy*. In 1861 that periodical was united with the *North American Journal*, and Dr. Hunt continued to supervise for several years longer the literary and mechanical work of the publication. In 1868 he commenced the *Homœopathic Sun*, a monthly journal of a somewhat more popular kind, but which was discontinued after one year. In 1864 he published, in conjunction with Dr. Marcy, the *Homœopathic Theory and Practice of Medicine*, in two large volumes, a work which deserves a special notice, not only for its positive merits, but as the first attempt in this country at a complete systematic treatise on practice founded on the principles of the new school. Many contributions from his busy pen may also be found in the various periodical publications of the school and in the transactions of medical societies.

It was not in the field of medicine alone, however, that our friend exercised his talents and inventive genius. While yet a young man he completed his *Pantological System of History*, and subsequently, at different times, his *Terrestrial and Celestial*

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Planosphere and *Planetarium*. As early as 1831 he elaborated, for his own use, a method of short-hand writing, remarkable for its practical simplicity. Other educational works for which the public is indebted to Dr. Hunt are, *A Pantological Chart of American History* (Appleton's, 1855), and a *Classbook of the History of the World* (Ivison, Phinney & Co., 1860).

For several years before his death, he had, to a large extent, withdrawn from the active exercise of his profession. On the 20th of October, 1878, his troubled but blameless and useful life in this world came to a peaceful end.

JAMES T. ALLEY, M.D., OF ST. PAUL, MINN.

Dr. James T. Alley was born in the town of La Grange, Dutchess County, N. Y., March 20th, 1831, and at the age of twenty years chose for his avocation the profession of medicine, and entered upon its study with Dr. Peter Barnes, of Poughkeepsie, N. Y. He subsequently attended the lectures of, and graduated from, the University Medical College, New York city, with distinction and honor in 1854, and began practice in that city, and there remained till 1861. Shortly after his graduation he espoused the teachings of homœopathy, and in 1856 received a diploma from the New York County Homœopathic Society, and ever afterward pursued this system of practice. In 1861, his health failing from lung disease, he went to Europe, where he remained two years, then again resumed residence and practice for two years longer in New York, when, to save his life, he removed to Minnesota. He resided at first, for a few months, at Wyoming, and subsequently, in the autumn of 1867, he settled in St. Paul, where he resided till his death, on the 17th day of September, 1878. The change proved fortunate for his health; and his recovery became so nearly complete that he came to regard himself as quite sound, and bore, with usual endurance, a large and laborious practice for many years. Dr. Alley became a member of the American Institute of Homœopathy in 1860. He was a member of the Ramsey County Homœopathic Medical Society and of the Minnesota State Homœopathic Institute, and had been honored as president of both organizations. By both his loss is

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deeply felt, and has been duly noticed by resolutions of mourning and condolence, spread upon their records and transmitted to the family of the deceased.

It rarely falls to the lot of the physician in middle life to secure and enjoy so completely the confidence, admiration, and respect of the profession, of his patronage, and of the entire community, as did Dr. Alley in St. Paul. To the profession, his learning and skill, his modesty, his candor and courtesy constituted him a treasure and a worthy model. To society, irrespective of dividing lines of medical faith, his social polish, his uprightness and purity of character, and his benevolent interest and zeal for every noble and elevating cause constituted him an honored acquisition and ornament. To his patients and patrons, added to these qualities, his unselfish devotion and sincere, tender sympathy rendered him greatly beloved and trusted. As a physician Dr. Alley was studious and painstaking, and his habits of professional thought were careful and comprehensive of all the data available. He was a positive man, but not an opinionist or bigot. An earnest homœopath, probably no other one in the West held more of the respect of allopathic physicians for attainments and character than he. His mind was judicial, his practice was eminently successful, and his counsel was always well considered, valuable, and enjoyable. He was utterly devoid of professional affectation and ostentation, and his presence was stamped with a refined candor and dignity which quickly won the trust of his professional brethren and of his patrons; and his uniform cheerfulness and quiet humor made his society delightful. Of Quaker parentage, he, in early life, set up his Christian standard in the communion of the Presbyterian Church, in which, in St. Paul, he was an earnest, faithful worker, an elder and a Sunday-school Superintendent. His character illustrated the moulding power of his religion. Through many months of the most intense, unceasing daily suffering, during his last sickness,—literally worn out with the most atrocious pain,—no impatient word or complaint from him was ever heard; and no doubt of the mercy and love of Divine Providence in all, clouded his faith. Dr. Alley was an eloquent and concise writer. His contributions to the current medical literature of his time were frequent and

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valuable. His name will be remembered as one of the editorial corps both of *The North American* and *The United States Journal of Homœopathy*. In 1873 he was a severe sufferer for one season with neuralgia. Recovering from this, he claimed and appeared to be in excellent health, till, in the winter of 1878, exhausting night-work and watching in some difficult and critical cases was followed by severe pain in his left breast and shoulder. After continued fruitless remedial efforts, he went for a change to New Orleans and the Gulf. After two months he returned, worse and weaker, instead of better, and was shortly confined to his room. The pain became more localized in the scapular region; a large abscess formed beneath this bone and between it and the dorsal spine. This was at length opened and emptied, with the vain hope, for a season, of relief therefrom. It continued to discharge, but slightly, till towards the last, without abatement of the pain. Paralysis of the extremities at first gradually invaded the whole trunk, and became complete some time before death, which remaining consciousness and a blessed trust in God enabled him to welcome with joy. Through all there was no return of his old pulmonary symptoms.

In the contemplation of such a character and life as Dr. Alley's, the eulogist must realize the poverty of words to represent its nobility. The power of such a life can only be felt; and great as is the glory of its achievements, not less potent is its memory as a model and an inspiration to the living.

Dr. Alley was married, in 1861, to Eliza S. Fannin, of Hamilton, Ont., who, with their only son, William S. Alley, survives him.

HAHNEMANN E. REINHOLD, M.D., OF WILLIAMSPORT, PA.

Dr. Reinhold was born in Lewiston, Mifflin County, Pa., April 19th, 1844, and died March 6th, 1879, aged 35 years. He became a member of the Institute in 1870. While he was still young, his father, a highly reputable physician, removed to Williamsport. He was educated under his father's care, with a view to the medical profession, and had barely completed his studies when the death of his father threw upon him at once the

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responsibilities of a large practice. How faithfully and effectually he fulfilled the difficult duty thus suddenly devolved upon him may be estimated by the great concourse of his fellow-citizens that gathered at his funeral, and the proud eulogies spoken at his early grave. Although his professional career was so short, it served to win for him the respect and admiration, not only of the community in which he lived and labored, but the cordial estimation of his medical colleagues and associates.

EDWARD PORTER, M.D., OF CLINTON, ILL.

Dr. Porter was born at Sinking Springs, Highland County, O., February 6th, 1833, and died at Clinton, Ill., March 1st, 1879, aged 46 years.

He commenced the study of medicine in 1851, according to the eclectic school, and was about ready to enter college when he became a convert to homœopathy, and abandoned the study of medicine for a time. In 1852 he removed to De Witt County, Ill., and engaged in farming. In 1856 he married Miss Lucy E. Mills, who survives him. In 1862 he enlisted in the 107th Illinois Regiment, and remained in the service for two years, when he was discharged for physical disability. In 1864 he was elected County Treasurer, which office he held for two terms.

During the last term of office he resumed the study of medicine, and in 1868 and 1869 he attended lectures at the Homœopathic College of Pennsylvania, from which institution he duly graduated. In the spring of 1869 he opened an office in Clinton, and, notwithstanding a bitter opposition on the part of the enemies of homœopathy, he succeeded in building up a practice which at the time of his death was larger than that of any other physician in the county. He was an enthusiast in his profession, and was ever ready, with voice and pen, to take up the defence of homœopathy. He was a vigorous and lucid writer, and did good service in maintaining the claims and credit of the therapeutic system he had conscientiously adopted against its numerous antagonists. In his practice he was what is called a "high potency" man, and for several years previous to his death rarely administered any remedy lower than the 200th dilution.

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As a citizen, not less than in his professional capacity, he was generally loved and respected by the people of De Witt County. In his decease homœopathy has lost an earnest and valuable advocate, and society a useful and honored member.

WILLIAM H. COOKE, M.D., OF CARLISLE, PA.

Departed this life, at Carlisle, Pa., on the 21st of March, 1879, Dr. William H. Cooke, in the fifty-first year of his age.

Dr. Cooke was born at York Springs, Pa., on the 1st day of January, 1829. The only child of his parents, he was, of course, the object of their deep solicitude. He received the rudiments of an education in the schools of his native village, and as he grew up was placed at an academy in Chester County, Pa., under the auspices of the Society of Friends, of which his father was a member. When he attained to the age of early manhood he spent some time in teaching, and for awhile, at least, read medicine under the direction of the late Dr. Hiram Metcalf, an eclectic physician of his neighborhood. These pursuits, however, he soon abandoned through a desire to visit the distant West. He went, in company with some of his youthful associates, to the then Territory of Nebraska. Here he engaged as a real estate agent, and took an active and useful part in the formation of the various local organizations then forming in that new and promising country.

About 1860 he returned to his native place, and being impressed with the favorable report, and himself witnessing the success of homœopathy he entered as a student the office of Dr. J. H. Marsden. As our medical colleges were then in their infancy, and supposed not to offer the advantages of older institutions, especially in the study of surgery and the so-called institutes of medicine, by the advice of his preceptor he matriculated in the Jefferson Medical College of Philadelphia, whence he graduated in the spring of 1862. Having married the daughter, the only surviving child of his preceptor, he opened an office, shortly after his graduation, in Carlisle, Pa. This is one of the largest, most wealthy, most refined, and intelligent towns

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in the interior of the State, situated in the Cumberland Valley, a region remarkable for its beauty and the fertility of its soil. Here Dr. Cooke devoted himself assiduously to the further prosecution of his professional studies, paying close and interested attention to those who, as patients, placed themselves under his care. This course soon secured, in a remarkable degree, the confidence of all classes of the community, and consequently his practice rapidly increased, and soon transcended his physical strength, which never had been great. He was an ardent homœopathist, devoted to his profession, and was consequently eminently successful in his practice.

It was not long, however, before his feeble constitution began to show unmistakable signs of giving way. Such, however, was his tenacity of purpose, that again and again, after short occasional seasons of rest which he was obliged to take, he would resume his practice with unabated energy. He was, as remarked by his eulogist on the occasion of his funeral, "a martyr to his profession."

He had long thought of leaving the Cumberland Valley as not conducive to his health, but his ties there were not easily severed. It was not till the autumn of 1878 that he made a serious effort to carry out this design. Bethlehem, Northampton County, Pa., was the place selected for making the trial of a change. This choice was made, not so much on account of any prospective benefit to be derived from the climate, as with a view to the educational advantages held out by the noble institutions of that place to his numerous and rising family. His wife had been educated principally at the Seminary at Bethlehem, and had still her friends residing there; her pleasant reminiscences of the place, was a circumstance which may have had some influence in determining his choice. In October last he visited Bethlehem, and shortly afterwards opened an office there. He soon began to gather some practice,—sufficient indeed to encourage the hope of future success,—but suddenly his health and strength so rapidly declined that he felt himself constrained to return to his family, still resident at Carlisle. After carefully arranging his temporal affairs he calmly resigned himself to the disposal of an All-

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wise Providence, and, sustained by Christian hope, peacefully yielded up his spirit into the hands of a faithful Creator.

So fades an evening cloud away;
So sinks the gale when storms are o'er;
So gently shuts the eye of day;
So dies a wave along the shore.

Dr. Cooke's time was so completely absorbed in his local professional duties that he never contributed largely to our journals or other professional literature. He was, however, an extensive reader of the current books and periodicals of the day. In conversation with his colleagues and at meetings of local societies he communicated freely his therapeutic views, which were generally definite and decided, and, as he considered, sustained by ample experience. Unremitting attention to his patients generally prevented him from attending the meetings of the larger associations, although he always manifested the deepest interest in their proceedings.

Shortly after his removal to Carlisle Dr. Cooke united himself with the Protestant Episcopal Church of that place, of which he continued to be a zealous and, for the most part, an official member till the close of his life. As an evidence of the estimation in which he was held, the corporation of that church, including some of the most distinguished men of the place, resolved to attend his funeral as a body, and placed on record their appreciation of his worth. His funeral, notwithstanding the inclemency of the weather, was largely attended by the residents of the place, and even by respectable people from neighboring and somewhat distant towns. Numerous expressions of regret at his untimely death appeared, in which we rejoice, not only on account of the man, but of the *cause* which he so faithfully and so creditably represented.

FRANKLIN BIGELOW, M.D., OF SYRACUSE, N. Y.

The subject of this brief notice was born in Batavia, N. Y., July 13th, 1827, but when a child of six years he was taken to Concord, Mich., and was reared upon a farm, receiving such an education as was then attainable in the district where his family

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resided. When some years older he became dissatisfied with the few educational opportunities within his reach, and determining to reach forward to higher aims, he returned to New York State, where facilities were offered to him that he could not obtain at home. In 1849 he became a student of medicine under the judicious instruction of Dr. L. B. Wells, then at Pompey, Onondaga County, and subsequently with the late Dr. Clary in Syracuse. He graduated from the Homœopathic Medical College of Pennsylvania in 1853, after which he was associated in practice with Dr. Clary for about one year. In 1854 he removed to Toledo, O., where he attained a satisfactory success and an enviable reputation. After ten or twelve years of arduous toil, in a climate that did not agree with him, his health became so much affected that he felt compelled to abandon the field in which he had been professionally so successful. He returned to Syracuse in 1865, and afterwards spent some time abroad, with the double purpose of benefiting his health and attending the medical clinics in Vienna. His health, however, was never fully restored, although he continued to practice, but with longer and more frequent interruptions. In the spring of the present year he became more seriously ill, and went to New York for additional professional advice, and while there quite suddenly passed away, March 12th, 1879.

In 1856 he married Miss Cornenia Williams, of Syracuse. He joined the Institute in 1854, the year of his settlement in Toledo. He would, consequently, have been this year enrolled on the list of Senior members had he lived a few months longer. He was also an active and influential member of various other societies and associations for the object of promoting the cause of homœopathy, particularly of the New York State Society, and that of Central New York.

Dr. Wells writes of Dr. Bigelow that "he was one of the most conscientious men I have ever known—true and reliable, under all circumstances."

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JOHN RAYMOND BOWMAN, M.D., OF CHEYENNE, WYOMING TERRITORY.

Although Dr. Bowman was one of our young members, he had given such promise of future success and usefulness, that it cannot but be a cause of sincere regret that his career has been so suddenly cut short. He was born in Colon, Mich., June 21st, 1849. He was educated at Albion College; studied medicine with Dr. E. B. Graham, in Three Rivers, and at the Hahnemann College of Chicago; graduated from the New York Homœopathic Medical College in 1874.

After practicing in Grand Rapids for a year he removed to Cheyenne, W. T., where he soon gained a very advantageous position, and established himself in a successful practice. About a year ago he was induced to remove to Denver, Col. Soon after his removal he caught a severe cold from exposure, which rapidly developed into a serious illness. As his sickness assumed the character of a general decline he returned to New York, with the intention of undertaking a sea voyage; but a few days before the appointed time of sailing he suddenly became worse, and died February 11th, 1879.

Dr. Bowman was a man of good judgment, well trained in his calling, of cheerful disposition, and very successful in gaining the confidence of his patients. He joined the Institute in 1875.

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LXXI.

REPORT

OF THE

COMMITTEE ON LEGISLATION.

BY T. S. VERDI, M.D., WASHINGTON, D.C.

THE Committee on Legislation has the honor to report that for the last two years it has endeavored to collect statistics that would show the status and progress of homœopathy in the United States so far as governmental recognition is concerned. Your committee regards this recognition on the part of governments as the means by which, chiefly, will be overcome the opposition and persecution of the old school of medicine.

It is a very encouraging and hopeful sign, in this contest, that so many Municipalities, States, and the United States have appointed homœopathic physicians to positions of honor and trust.

The following is a list of homœopathic physicians who have received such appointments of "honor and trust;" positions which but a few years ago were looked upon as peculiarly the property of the so-called regular school of medicine, and to which no homœopathist was ever thought of as eligible to appointment.

This list is, as a matter of course, very incomplete, which is not, however, the fault of your committee.

H. L. Obetz, M.D., County Physician of Edgar County, Illinois, and President of the Homœopathic Medical Society of the Wabash Valley, Paris, Illinois.

H. N. Keener, M.D., Town Physician of Princeton, Illinois, and Secretary of the Town Board of Health.

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O. N. Hoyt, M.D., County Physician for Howard County, Iowa; Cresco, Howard County, Iowa.

John A. Vincent, M.D., Mayor of Springfield, Illinois.

Richard K. Paine, M.D., City Physician of Manitowoc, Wisconsin.

Dwight Silliman, M.D , Coroner of St. Croix County, Wisconsin.

Henry Tucker, M.D., Secretary Western Massachusetts Homœopathic Medical Society, Brattleboro, Vermont.

J. B. Wood, M.D , Chief Burgess, West Chester, Pennsylvania.

M. B. Campbell, M.D., Physician to Illinois State Penitentiary, Joliet, Illinois.

E. C. Gaffney, M.D., Member of Board of Health, Springfield, Illinois.

Daniel S. Kimball, M.D., United States Pension Surgeon and Notary Public, Sackett's Harbor, New York.

L. Dennis, M.D., Member of New Jersey State Board of Health, Newark, New Jersey.

W. H. Leonard, M.D., Member of State Board of Health, and Inspector of Hospital for the Insane, Minneapolis, Minnesota.

J. L. Dunn, M.D., Examining Surgeon for Pensions, Titusville, Pennsylvania.

John C. Campbell, M.D., Assistant Surgeon 12th Regiment Ohio National Guards, Ashland, Ohio.

F. M. Huitz, M.D., Assistant County Physician, Milwaukee County, Milwaukee, Wisconsin.

N. A. Gray, M.D., Member of State Board of Trustees of Northern Wisconsin Asylum for the Insane, Oshkosh, Wisconsin.

Edward Paine, M.D., Member of Common Council, Milwaukee, Wisconsin.

Charles Sturtevant, M.D., Medical Examiner, Hyde Park, Massachusetts.

Buffalo, New York, has two homœopathic physicians to attend the poor.

J. C. Budlong, M.D., Surgeon-General, Providence, Rhode Island.

N. G. Stanton, M.D., Surgeon-General Newport Artillery, Providence, Rhode Island.

Charles Hays, M.D., Surgeon-General to Cavalry Battalion, Providence, Rhode Island.

George B. Peck, Jr , M.D., Surgeon to Light Artillery Battalion, Providence, Rhode Island.

E. S. Coburn, M.D., City Physician, Troy, New York.

Dr. Davis, Board of Health, Richmond, Indiana.

The City Hospital of Indianapolis, Indiana, has three homœopathic physicians on its staff.

Wallace McGeorge, M.D , Mayor of Woodbury, New Jersey.

D. R. Gardner, M.D., Councilman, Woodbury, New Jersey.

N. Seidlitz, M.D., Chairman of the Board of Health, Keokuk, Iowa.

J. J. Youlin, M.D., Member of Board of Health of Jersey City, New Jersey.

A homœopathic physician is Vice-President of the Council of the College of Physicians and Surgeons of Ontario.

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Fred. Hiller, M.D., Coroner of San Francisco, California.

W. A. Whippey, M.D , Elkhart, Indiana, President of the Goshen Board of Health.

A. L. Fisher, M D , Elkhart, Indiana, Secretary of the Board of Health.

H. B. Dale, M.D., President of the State Homœopathic Medical Society, and Mayor of Oshkosh, Wisconsin.

Walton W. French, M.D., Coroner and Health Officer, Ballston Spa, New York.

M. S. Brirg, M.D., Bath, Maine, Member of the Board of Overseers of the Poor.

The City Board of Health of Sacramento, California, is composed of homœopathic physicians entirely.

Reuben Ludlam, M.D., Member of the State Board of Health of Illinois.

B. H. Cheney, M.D., Member of the Board of Examining Surgeons for Pensions, and Member of the City Board of Health, New Haven, Connecticut.

W. D. Anderson, M.D., Member of the Board of Examining Surgeons for Pensions, New Haven, Connecticut.

John B. Vivion, M.D., City Physician, Galesburg, Illinois.

George Pyburn, M.D., City Physician, and Physician to the City Dispensary and County Hospital, Sacramento, California.

M. C. Bragdon, M.D., Member of the Board of Health of Evanston, Illinois.

Edward Jay Morgan, Jr., M.D., Coroner of Tompkins County, Ithaca, New York.

John H. Henry, M.D., has held the office of Mayor, Member of City Council, County Physician, and Physician to the City Hospital, Selma, Dallas County, Alabama.

The following very interesting letter from Dr. C. W. Breyfogle will give the Institute an account of the progress of homœopathy in California. The reference to Oakland, Dr. Breyfogle informs your Chairman, was written by Dr. Nicholson of that city.

SAN JOSÉ, CALIFORNIA, May 1st, 1879.

T. S. VERDI, M.D., *Chairman of the Committee on Legislation, American Institute of Homœopathy.*

DEAR DOCTOR: The history of homœopathy in California presents few points of interest, and but little reliable data up to the year 1876. The whole to that date is the old story, somewhat intensified perhaps, of a gradually increasing representation of practitioners and a rapidly increasing clientage. Very unfortunately, however, dissensions existed among these practitioners to such an extent as prevented full effort in any direction, and as a school, and as an organization, the prosperity of our cause was seriously retarded Two societies existed, each claiming to be *the* State society, and

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the war was very bitter. The passage by the State Assembly of 1876 of a Medical Law authorized any medical society regularly chartered by the State, and existing on the 1st day of March, 1876, to be empowered to appoint a board of examiners, and that no man could practice medicine in the State without a license from one of said board. Three societies came under the provisions of this law, namely, the State Allopathic, the Eclectic, and the "California State Society of Homœopathic Practitioners." The other homœopathic State society (The Pacific State Medical Society) was excluded. This still further embittered the feeling between the two societies.

In September, 1877, through the exertions of conservative men upon both sides, both of the old societies were disorganized, a union was perfected, and "The California Homœopathic Medical Society" sprang into existence.

All branches of the medical profession having found the previous medical law inefficient, a new bill was introduced into the Assembly of '77 and '78, by united action, and passed. The only objections to its passage were from those whom the law was designed to operate against, and a very few homœopathic malcontents, who, having been the original cause of all the previous dissensions upon this coast, were very wisely left out of the new organization. The new law gives homœopathy equal position with other medical schools in every respect, and it is still in successful operation. The status of our new society is all that could possibly be hoped for. It has 42 members, comprising the very best of our profession in the State. It is harmonious, and its meetings are devoted to *real work*. Hardly sufficient time has yet elapsed for the perfection of much organized work, but it is mapped out, and we promise our Eastern brethren that it shall be prosecuted with real vigor. Our efforts have been thus far directed toward the strengthening of our young society, in order that we may be able to quietly ignore all that has heretofore produced discord, and answer all vituperation by a high and honorable medical status. This end we have already attained.

Locally, much has been done. In Alameda County, Oakland has a homœopathic hospital and free dispensary, under the immediate management of the homœopathic ladies of the city, and under the general supervision of the homœopathic medical society of the county. Until the establishment of this hospital Oakland offered no shelter for the unfortunate sick, and to this day none other has been organized. Among the admissions there were some who preferred the old treatment. The physician in charge, with the consent of the ladies, invited the physician of their choice to take charge of their cases, which was done. Thus has homœopathy not only taken the lead in hospital accommodations, but has heaped coals of fire on the head of allopathy by her unselfish generosity. The deaf and dumb State institution is located in this place, and during seven years of the past twelve the unfortunate inmates have been under homœopathic treatment. Recently, however, a change was made in the directorship of the institution, and the majority of the new directors being favorably disposed to the old treatment, the institution lapsed back under allopathic rule.

In Sacramento, mainly through the efforts of that earnest worker, Dr. G. M. Dixon, the Board of Supervisors, after a very hot contest, elected Dr.

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George Pyburn, a homœopathist, County Physician and Superintendent of Hospitals, at a salary of $3000 per year. It also appointed two homœopaths to membership upon the Board of Health, to the great indignation of the three other (allopathic) members of the Board. These three promptly resigned, but, to the great disgust of the "regulars," their resignations were accepted, and three more homœopaths appointed in their places.

Beyond this brief statement to show that we are hopeful, and not idle, I do not know that we have anything to report.

You ask what legislation we need. I answer, *any* that advances homœopathy, and gives it its just representation among medical schools. We occupy an isolated position in the land, and, like the vidette at the outpost, can act better by being instructed from the reserve force. We are proud of our patrons, and should you who are in the very centre of the fight need our aid, we might be able to help you through our Congressional members, or by our home strength. All honor to those who stand the brunt of battle! Our words, our works, and our prayers are for you.

With congratulations upon the great triumph you have obtained in the appointment upon the National Board of Health,

I remain, fraternally yours,

C. W. BREYFOGLE, M.D.

Your committee would invoke the aid of every member of our cherished profession in working in the interest of equitable distribution of medical offices of honor and profit and of recognition.

To illustrate how these mixed commissions tend to break the barrier of ancient opposition I will relate what occurred in the section "State Medicine" of the American Medical Association at its last meeting in Atlanta. I was an invited guest, being in Atlanta attending a meeting of the National Board of Health, which took place at the same date. Professor Hosmer A. Johnson, M.D., of Chicago, Ill., being the chairman of the section, reported that the State Board of Health of Illinois is composed of allopathic and homœopathic, and one eclectic, physicians. On being asked how so mixed a commission could accomplish valuable work, he answered that he found that the homœopathic member was the most anxious to secure the education and the fitness of candidates for the license to practice their profession; and, to prove his assertion, he read the questions the homœopathic member had submitted for the examination of homœopathic candidates. The questions were such that only physicians of marked ability and thorough education could answer, and he

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paid a very high compliment to that distinguished member, Dr. R. Ludlam, of Chicago.

Dr. Rauch, another member of that State Board of Health, followed, reiterating all that Dr. Johnson had said. This report made a most favorable impression, and not another word was said in opposition. Several distinguished allopathic physicians, amongst whom was Dr. Vanderpoole, Health Officer of New York City, expressed to me their gratification on hearing that report; declaring, also, that it was high time that no distinction should be made among medical men, except on account of education and personal qualifications. When this happens a new era will have arrived, and all physicians will be linked together in one common brotherhood, which is as it should be in so noble a profession.

The work of the Committee on Legislation during the past year has been done almost entirely by the chairman of that committee, who was obliged to act independently of his colleagues; but he believes that he has their confidence, and that they will indorse his actions. Things of vital importance to our school have occurred during the past year at the seat of government, where your chairman resides, in which he had to take the responsibility, and act with promptness in order to secure the best results. He reports the results of these actions to the Institute with the hope of securing its approval.

The yellow fever epidemic of last year suggested to that high-minded and benevolent woman, Mrs. Elizabeth Thompson, the idea of a high commission to investigate the cause of these recurring epidemics, and proposed some plan through which they might be prevented in the future. She intrusted her ideas to Dr. J. M. Woodworth, Surgeon-General of the Marine Hospital service, for a practical plan of operation, she securing the expenses that might be incurred thereby. Dr. Woodworth entered enthusiastically into the project, and at once, with his intelligence and accustomed energy, appointed a commission of eminent physicians and experts to carry out the object intended. It was soon apparent that the government would be appealed to to render such assistance with legislation and money as the serious situation required. It was then that I saw that our school must

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not lose a moment in presenting its claims, and for that purpose I suggested and insisted upon a commission of our own, that could present to Congress the relation of homœopathic treatment to the cure of yellow fever. A commission that would investigate fairly, rise above personal or professional interest, and collect historical facts that could not be controverted. The commission, now well known, composed of men of high character, professional integrity, and learning, was appointed by the President of the American Institute of Homœopathy. It was late when this commission was enabled to take the field,—I say late, because Congress would actually be in session while the commission would be making its researches, and as the session of Congress was a short one, and legislation on infectious diseases would be imperatively demanded, I felt it my duty to remain in Washington to watch legislation. I was not mistaken, though I desired to be with my colleagues in the theatre of the epidemic. As soon as Congress met it appointed a joint committee of the Senate and the House for the investigation and the prevention of contagious and infectious diseases. This committee at once decided to appoint a board of experts. I immediately submitted the claims of homœopathy, and demanded that it be represented in that board. The joint committee conceded my claim, and passed a formal resolution to the effect that at least one member shall be a homœopathic physician.

Dr. L. A. Falligant, of Savannah, Ga., was then appointed at my suggestion, and the homœopathic school of medicine may be proud of the selection, for no more competent, self-reliant, and self-asserting man exists in our ranks. His record on that board does credit to himself as well as to the school he represented. We consulted together often over the deliberations of that board, and we concluded that they served to an object rather than to a principle; that is, having in view a national quarantine system, they would declare all epidemics of yellow fever to issue anew from foreign importation, holding of little account the local and physical conditions which may reanimate, as it were, a dormant seed of the disease on American soil. Dr. Falligant stood his ground firmly and gallantly in opposition to that sweeping theory, and the report of the experts had to bear his single non-

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concurrence. I have since heard allopathic physicians and sanitarians of high standing praise his conduct and his well-pointed objections.

The report of the experts and other influences increased the interest of Congress in a future plan for the preservation of the South against the incursion of similar fatality. But before I go further I must state that, while the board of experts was still in session, and had not perfected its report, the report of the Homœopathic Yellow Fever Commission appeared. It was then my duty, as it was the desire of all our physicians, that said report be treated with equal consideration by Congress as the report of the Woodworth commission, the report of the experts, and similar papers on the same subject. I must say, to the credit of our statesmen, that they were treated with impartiality in this matter. The joint committee accepted our report, and reported it to the Senate and House of Representatives, with the recommendation that it be printed with other reports of the same character submitted, with the exception of the treatment, which was not called for in the resolution appointing said committee. To that I could not object, as the resolution was plain, demanding only an investigation into the *cause* and *prevention* of yellow fever. Whenever those papers are printed, the matter contained in the homœopathic report, germane to the resolution, will be printed also. To have asked more would have been an intrusion and a discrimination.

Finally, on the last day of the session, and I might say at the last hour, Congress passed a bill providing for a National Board of Health with certain duties. In this National Board of Health again it became necessary that our school be represented. I at once pressed the claims of our school before the President, who was not reluctant in recognizing them. On the contrary, I must say that the President, in the face of great pressure and opposition, stood his ground firmly from first to last. In this work I was greatly aided by petitions of the homœopathic physicians of Cincinnati, Dayton, and Springfield, Ohio; by Drs. Wesselhœft and Kellogg, two of the executive officers of the American Institute of Homœopathy; by all the members of the Homœopathic Yellow Fever Commission; by the faculties of the homœo-

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pathic colleges of St. Louis, Chicago, Ann Arbor, Cincinnati, Iowa, and New York; by fourteen Senators, and as many Representatives, and to them I owe my appointment, as they singled me out by name as their proper representative on said board. The President appointed me, and the Senate confirmed me, although strenuous efforts had been made by jealousy and trickery to prevent my confirmation.

I say, to the pleasure and gratification of all concerned, that I have found liberality and fairness in the President, his advisers, and in the legislators of the land; that homœopathy is no longer the scarecrow of old, but an acknowledged science, the disciples of which are entitled to and receive the respect of government as well as of individuals; that its claims will be respected hereafter; and that its success in representation will depend upon the energy and earnestness of those whose duty it is (and it is the duty of all homœopathic physicians) to see to it that justice is done.

It must not be forgotten that when I came to Washington, twenty-two years ago, homœopathic physicians were professionally outlawed; that they had no professional rights that the courts were bound to respect; they could not even collect a professional bill through the forms of law. Since 1870, however, I obtained from Congress a charter placing the homœopathic profession in equal rank with the allopathic school, with similar and equal rights and privileges. I caused President Grant to recognize our profession by appointing me a member of the Board of Health of the District of Columbia, an appointment that was to be confirmed by the Senate. Of that board I became secretary, then health officer, then its president. Then the Governor of the District, with the consent of the President, sent me to Europe as "Special Sanitary Commissioner." Thus we have obtained from the government the recognition spoken of above. Taking all things into consideration, the inveterate and ingrained opposition of the old school, so numerous and powerful, we must admit that great advancement has been made.

Some may think that in all this I have had a personal interest, as honors have been conferred upon me, but they are mistaken. My interest is only so far as it concerns my professional affilia-

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tion. If a man should say to me, "I honor you, but despise your colleagues," I would take it as a personal insult. *I want to honor my profession, that thereby I may be honored.*

In connection with this I must pay a deserved tribute to that noble woman, Mrs. Elizabeth Thompson. When I appealed to her for help, as we had no funds for the expenses of our commission, she willingly and liberally gave me six hundred and fifty dollars. Five hundred and fifty I have transferred to Dr. Holcombe, President of the Homœopathic Yellow Fever Commission, for the personal expenses of the members, and for the printing of the report; one hundred I have spent myself in the work.

As to the National Board of Health, I must state that the President has shown great intelligence and tact in the selection of its membership; every one, with the exception of your humble servant, are men eminent in their profession, and particularly in Sanitary science. They are men of great integrity of purpose and high-mindedness; my association with them is exceedingly pleasant. The members constituting said board are the following:

James L. Cabell, A.M., M.D., LL.D., Professor of Surgery and Physiology in Virginia University; Professor Samuel M. Bemis, M.D., New Orleans, La.; Professor Hosmer A. Johnson, M.D., Chicago, Ill.; R. M. Mitchell, M.D., Memphis, Tenn.; Professor Stephen Smith, M.D., New York; H. I. Bowditch, M.D., President Massachusetts State Board of Health; T. S. Verdi, M.D.; John S. Billings, Surgeon U. S. A.; S. F. Phillips, Solicitor-General, Department of Justice; T. I. Turner, Medical Director U. S. N.; P. D. Bailhache, Surgeon U. S. Marine Hospital Service.

I desire, in closing, to tender my thanks to all those, professional and non-professional, who assisted me in attaining this great object. A few, very few, have been irresponsive; to these the profession owes no thanks.

T. S. VERDI, M.D.

WASHINGTON.

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LXXII.

REPORT

OF THE

HOMŒOPATHIC YELLOW FEVER COMMISSION,

APPOINTED TO INVESTIGATE THE THERAPEUTICS OF THE LATE EPIDEMIC, AND TO SUBMIT THE RESULTS TO THE AMERICAN INSTITUTE OF HOMŒOPATHY AND TO THE AMERICAN CONGRESS.

By William H. Holcombe, M.D, New Orleans, *Chairman;* T. S. Verdi, M.D., Washington City, *Secretary;* Bushrod W. James, M.D., Philadelphia, Pa.; W. L. Breyfogle, M.D., Louisville, Ky.; J. P. Dake, M.D., Nashville, Tenn.; E. H. Price, M.D., Chattanooga, Tenn; F. H. Orme, M.D., Atlanta, Ga.; L. A. Falligant, M.D., Savannah, Ga.; Lucius D. Morse, M.D, Memphis, Tenn.; W. J. Murrell, M.D., Mobile, Ala.; Thomas J. Harper, M.D., Vicksburg, Miss.

To the President and Members of the Institute:

As commissioners appointed by the executive of your organization to inquire into the character and therapeutics of yellow fever, as developed in the late epidemic, we beg leave to report.

The methods and results of our inquiries we present in two parts, the first being historical, and the second descriptive of the treatment as we found it among the homœopathic practitioners in the field of the epidemic.

We submit herewith a copy of our special report, embracing statistics and comparisons, as presented by us to the late Congress of the United States.

Part First.

The yellow fever of 1878 excited extraordinary interest throughout the United States. It began with a malignancy

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not witnessed since 1853; it attacked all classes, but little children with peculiar violence; it spread rapidly in all directions; it visited many places where it had never been seen before. Pursuing refugees along the line of rapid travel, it appeared at Louisville, Cincinnati, St. Louis, Chicago, New York, and even in country villages, and amid the quietude of summer retreats.

No previous epidemic ever created such a panic. People fled before the pestilence like leaves before the wind. Many villages and towns were almost deserted. City quarantined against city, and town against town,—even house against house. Rumor and the sensational press exaggerated what was already terrible enough. The selfishness and cowardice of human nature were sometimes painfully manifested. Friend deserted friend; brother fled from brother. Even parents abandoned their children—little ones were found dead in their beds with their shoes on, having died unattended and alone!

The noble instincts of man now came to the rescue. Instances of courage, sacrifice, and self-immolation multiplied on all sides. Heroes, male and female, rushed to the front from all quarters, and stemmed the tide of demoralization. A sympathetic thrill passed through the heart of the nation. Money, provisions, clothing, assistance in every shape, were presented to the sufferers, and a magnificent stream of bounty flowed through the organized charities of the South, until there was no man, howsoever poor, white or black, who could not obtain, on call, his doctor, his nurse, his champagne, and brandy to revive him, or a decent burial when dead.

While the epidemic was still raging and the public mind still excited and harrowed by its details, inquiries arose and passed from mouth to mouth: How can these horrible visitations be prevented? What is yellow fever? Where does it originate? How does it spread? What can be done to stop its career? These questions have occupied the medical mind for a century or more—and the books, pamphlets, monographs, and discussions on every point of interest connected with yellow fever have accumulated into an immense library, and all without any satisfactory results having been attained. But the practical mind of the American people demanded renewed investigation, larger and

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wider observations, more concerted actions, and it will not rest satisfied until some plan is discovered to protect us from such a fearful scourge.

The first issue of this popular agitation was a Yellow Fever Commission, instituted and suggested by a wealthy and high-minded lady of New York, Mrs. Elizabeth Thompson, who called to her aid Dr. Woodworth, of the United States Marine Hospital Service, for the execution of her plan, and offered to pay all the expenses connected therewith. A commission, composed of three distinguished allopathic physicians and Colonel Hardee, an eminent scientist of New Orleans, was thus appointed and proceeded to the various infected towns and cities to collect facts and statistics and throw as much light as possible upon the yellow fever problem. The partial report made by this commission to the American Public Health Association held at Richmond, Va., November 19th, was unsatisfactory to the profession and the public. They seem to have gone over the same old ground, to have collected similar masses of contradictory evidence, and to have agreed upon nothing, except that yellow fever is an exotic, and can be kept out by an efficient quarantine, a position long and still disputed by one-half of the medical profession.

At the announcement of this commission it was felt by many of us, who had been familiar with the *ex parte* researches set on foot and conducted by army surgeons and old-school practitioners, that the results would be very imperfect and very unfair, especially as to our modes and means of treatment. Regarding the inquiries concerning the cholera epidemic of 1873, authorized by Congress and placed before the public by Surgeon-General Woodworth, as a fair sample of what might be expected of the Yellow Fever Commission and its publications, it was thought advisable to have another commission organized to look especially into the therapeutics of the disease.

After considerable correspondence on the subject it was agreed between Dr. Verdi, of Washington, Dr. Falligant, of Savannah, and Dr. Dake, of Nashville, that the President elect of our national homœopathic society, Dr. Wesselhœft, of Boston, should be asked to appoint a special commission of homœopathic physicians.

Knowing that the items gathered by the allopathic commis-

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sioners were intended for submission to Congress in order to influence legislation in the interest of certain theories and cliques, it was the intention of President Wesselhœft and his advisers to have the homœopathic commissioners prepare two reports, the first as speedily as possible for presentation to Congress, and the second, more at length and more technical, for submission here.

After some hesitation as to his authority in the appointment of such a commission, in the absence of any provision therefor in the By-Laws, Dr. Wesselhœft yielded to the urgent demand of his brethren in the South, appointing eleven commissioners, seven of them yellow fever experts, who were asked to begin work at once.

Mrs. Elizabeth Thompson, as soon as apprised by Dr. Verdi of the organization of this commission, came forward with characteristic benevolence, offering to pay its expenses.

Before mentioning the successive steps taken by us in pursuance of our appointment, we must briefly explain that the field apportioned to us was something different from that occupied by the allopathic commission. That body busied itself mainly in considering the causes, propagation, and prevention of yellow fever, giving but little attention to the treatment of the disease. True, the circular letter sent to physicians made a short inquiry about the treatment, but the answers were no doubt so contradictory, and the results so unsatisfactory, that the commission made no report on the subject to the American Public Health Association, and will probably make none in the more elaborate report preparing for Congress. Moreover, if the commission had reported upon the treatment of yellow fever the returns of homœopathic physicians would have been probably ignored and rejected, as was done by the commission of 1873, which investigated at the public expense the treatment of Asiatic cholera. We have learned to distrust the impartiality of allopathic physicians and army and navy surgeons, and the homœopathic party, if we may be allowed the expression, is getting too strong in the United States to allow any more public medical work to be done without having a fit representative to assist therein.

We considered the treatment of the disease and the comparative results of different methods, as objects of supreme interest to

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the great public who suffer by the scourge, and the question of cause, propagation, and prevention as of comparative subordinate value. The cry for something to be done to mitigate the severity and diminish the mortality of yellow fever is sharp and imperative, whilst the other problems are compelled to wait long and patiently upon the tedious processes of observation and experiment. Therapeutics first and prevention afterwards was the motto. To discover and verify a method of making yellow fever a light and manageable disease would do more than anything else to allay popular apprehension, prevent panics, and maintain social and commercial intercourse in their accustomed order.

The commission began its work by issuing the following circular letter, a copy of which was mailed to every homœopathic physician practicing in the yellow fever districts of the South:

CIRCULAR LETTER.

DEAR DOCTOR: We have been appointed by the President of the American Institute of Homœopathy a commission to investigate the results of homœopathic treatment in the late epidemic of yellow fever, with a view of laying the report before Congress, and getting that body to publish the same as a supplement to the report of the Yellow Fever Commission, now at work upon its cause and means of prevention.

The physicians of our school have done gloriously in the late epidemic, having, we firmly believe, reduced the mortality of yellow fever to less than one-half of the acknowledged allopathic loss. We have much to say about the treatment of yellow fever which it behooves, not only the medical profession, but the people of the United States, to listen to and believe. Our reports are denied publication in the allopathic journals. The great majority of the medical profession itself is ignorant of the vast advances we have made in behalf of science, truth, and humanity. We have endeavored, often in vain, to awaken the conscience and enlighten the mind of the old school on this subject. We intend to gather our statistics in the most careful and scientific manner, and to lay them before Congress as matters of vital importance to the health, welfare, and prosperity of the nation.

We invite your cordial co-operation in this work. We beg you to throw aside all indifference, sloth, business cares, prejudice, and personal feelings, and aid the commission by consulting your books, records, and memories, and giving us the facts required.

1. How many cases of yellow fever have you treated this year?—genuine, unmistakable cases, the diagnosis of which you would be willing to submit for criticism to the most accomplished yellow fever expert.

Give, if possible, a list of your cases, with names, addresses, dates, etc. This is done so that we may have the data ready to verify our claims, and to

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challenge the scrutiny of the incredulous and a comparison with the best allopathic results.

2. How many deaths occurred in your practice? Please give the whole number, including all those who came to you at the last hour, or who relapsed, or who committed fatal imprudences. All of us can *explain away* a number of our deaths, thus shifting the responsibility from our own shoulders; but allopathic physicians can do the same thing; and no just ground of comparison can be obtained unless each physician reports the exact number of patients who died under his hands.

If any physicians, as sometimes charged, have reported, inadvertently, by faulty diagnosis, or for other reasons, cases as dying of meningitis, hæmorrhage, congestion of the brain, malarial fever, etc., which were really yellow fever cases, we implore them now to correct the error, and to charge to our practice every single death which may be fairly attributable to it. We are not seeking to glorify homœopathy or ourselves, but to discover the truth for the common benefit. If homœopathy has made a better record than allopathy, we want the profession and the world to know it; if the reverse is true, we wish to be undeceived ourselves and turn allopaths.

3. Please state the number of recoveries after black vomit.

4. Please state the number of children under fifteen years whom you attended and the percentage of loss. Also the number of colored persons and the percentage of loss.

5. Please state how many times you lost more than *one* patient in the same family or same house.

6. Please state your favorite remedies or measures to reduce the high temperature of the first stage, with dose, etc.

7. Please state your best remedies or measures for the second stage, especially for vomiting.

8. Please state your treatment of the third or collapsed stage.

9. Please give your ideas as to diet and general hygienic regulations.

10. What did you do for the pervigilium and restlessness so peculiar to the disease?

11. What did you do for the hæmorrhagic symptoms, including black vomit?

12. What did you do for suppression of urine?

13. What external measures did you find useful?

14. To what extent did you avail yourself of allopathic or eclectic means not included in the above answers?

15. Give any other information or suggestions which may seem to you important, relating to temperature, pulse, new features, causes, etc.

16. Give briefly statements of treatment and results, with homœopathic medicines, in former years.

If every physician of our school will fully and freely answer all these inquiries, putting his whole heart and mind into the matter, we can accumulate an immense mass of facts which will render incalculable service to our glorious cause.

It is distinctly understood that in making our report all names of physi-

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cians are to be ignored, each physician casting his facts with a common stock, and sharing, equally with all, the advantage or disadvantage of the total result.

WILLIAM H. HOLCOMBE, M.D.,
Chairman.
T. S. VERDI, M.D.,
Secretary.

As a Commission we met on December 2d, 1878, at the St. Charles Hotel, in the city of New Orleans, and found that the profession generally had given us a very cordial and satisfactory response. We received thirty-seven letters from medical gentlemen containing information, reports, and suggestions of varied value. We received twenty-three returns in answer to the circular letter from practitioners who had served more or less arduously through the late epidemic, and seven returns from physicians who had practiced homœopathically in former visitations of yellow fever.

There were three distinct sources of information upon which we relied:

1st. Written reports of physicians, personal interviews with them, discussion and comparison of ideas as to the plan of treatment and effect of remedies.

2d. Examination of the records of boards of health and other public institutions, and the general literature of the disease, both past and present.

3d. Reading and discussion of papers presented, and conversations with intelligent and trustworthy citizens as to the origin, spread, and diversity of the disease, and the comparative value of different modes of treatment.

We should mention, *en passant*, that upon our arrival in New Orleans we issued a card to each and every homœopathic physician in the city and vicinity, asking him to attend a general meeting at our rooms, that he might be informed of the purpose of the American Institute in sending out a Commission, and of the methods of inquiry adopted by us in the execution of our work.

The meeting thus called was largely attended. Dr. Dake was called upon by the chairman to preside and to speak in behalf of the Commission. He did so, explaining fully and clearly the interest felt all over the country in the great struggle in which

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they had been engaged, the character of the inquiries undertaken by the allopathic commission, the efforts to control legislation at Washington in the interest of medical theories and cliques, and the urgent need of a prompt and vigorous co-operation on the part of the practitioners and friends of homœopathy, in order to secure simple justice for their school, and superior benefits for a plague-stricken people.

He asked each one present, who had not already done so, to give us a statement of the number of cases treated by him, and the number lost, with the leading remedies employed. Such statistics were especially wanted for an early presentation to Congress.

Much to our surprise and regret six physicians present refused to submit for our use any items of information, on the ground of some peculiar obligations to a local relief association of transient importance only. Their reasons for thus withholding from your commissioners, and reserving exclusively for such a non-medical organization, the clinical and purely medical data sought, were in no wise satisfactory to us nor creditable to them. We obtained the number of their losses from the board of health, and could have calculated the number of their cases, on the basis of the same relative success which followed all the other practitioners of our school, but preferred not to swell our figures, already sufficient for our purposes, by impressing numbers into our service so discourteously withheld.

The officers of the New Orleans Board of Health opened their books for our inspection, and aided our inquiries in every possible way.

Papers were read during our sessions by Dr. Falligant, of Savannah, Sergeant Simons of the United States Signal Service, and Mrs. Ingram, of Nashville, bearing upon the causes, nature, and prevention of yellow fever. They were very interesting, and aided in shaping the views embodied in the several chapters of our report. We do not here submit the papers mentioned, because they have been already given to the public through other channels.

At the close of our sessions in New Orleans we divided up, and went to other parts of the great field.

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At Vicksburg we were pleased to find a glorious work accomplished by two veteran practitioners of our school, aided by students and laymen, who went among the sick dispensing homœopathic remedies. Such was their success that public attention was drawn to their ministrations, and highly complimentary notices appeared in the papers, extolling their skill and the merits of homœopathy.

Our statistical exhibit shows something of the extent and quality of the work done there.

At Jackson, Miss., our single practitioner did good service till he was himself prostrated by sickness.

At Holly Springs a visiting homœopath from New Orleans had some practice, no report of which was given to us.

At Grenada we had no one to administer homœopathically.

At Memphis we found that our physicians were either disabled by sickness or absent from other causes, so that one only remained to contend with the "yellow-plumed knight."

Such, however, was the panic among the people of that city, and such the stampede to places of safety, that few families remained to require the services of a homœopathic physician.

So few remained who had means to take them away that nearly all the sick were provided for by the Howard and other Relief Associations, each of which had its own physicians of the allopathic school. The case of Memphis was peculiar, and in every way distressing.

At Brownsville and smaller places in West Tennessee visited by the epidemic there were no practitioners of homœopathy.

Chattanooga, suffering much as did Memphis, was more fortunate in being less panic-stricken, and in having the services of three practitioners of our school. Among the recognized institutions of that city was the Homœopathic Hospital for yellow fever cases, receiving from the treasury of the General Relief Association a due proportion of the contributions made to the city from all quarters. We found there an illustration of the wisdom and utility of our continuing, as long as possible, to have common interests with the old school, or, at least, common benefits, so long as the advancement of truth and welfare of the sick are not thereby hindered.

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The sense of right and fair-dealing is yet potent enough among the managers of public affairs, or, at least, among the more intelligent of the people, to insure us a proper share of public favor whenever we earnestly and calmly present our claims. In times of great peril the spirit of bigotry, and sectarianism, and selfishness should not govern our policy nor dictate our practical measures.

In conclusion of this part of our report we may be allowed to mention that our labors as a commission have already resulted in marked benefits to our school.

When the Congressional Committee appointed for the investigation of yellow fever and Asiatic cholera called to its aid a number of medical and sanitary experts, one of our number was included, as a recognition of the qualifications and rights of practitioners of homœopathy.

And when that board of experts began its investigations in New Orleans, the second medical man summoned to give his observations and opinions in regard to the late epidemic was the Chairman of this Commission.

And when the President of the United States nominated men to compose the National Board of Health he placed among them the Secretary of this Commission.

In accordance with our original programme we submitted to Congress, and laid before the heads of departments in Washington, a special report, made up of statistics and of some of the materials embraced in this report.

In response to an urgent call from the profession and people to furnish copies of our special report for extensive distribution, and having exhausted the funds placed at our disposal by Mrs. Thompson, we requested Messrs. Boericke & Tafel, who had already done much to facilitate our work, to issue a large edition of that report, putting the price, as near as possible, at actual cost. Our request was complied with, and thousands of copies have been spread over the land. The major benefits to our cause, growing out of our more successful treatment of the yellow fever, as set forth in our reports, will be more especially noticed when, in future years, the scourge of the tropics shall come again to devastate the fair homes of the South.

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Part Second.

REPORT ON THE TREATMENT OF YELLOW FEVER BY HOMŒOPATHIC PHYSICIANS.

The limited range of the duty assigned us does not permit us to discuss the history, symptoms, or pathology of yellow fever. We are simply to present to the Institute a clear and condensed statement of the treatment of this disease by homœopathic physicians, to show what our new and progressive system has really done to mitigate this great scourge of the tropics. Our information has been derived from the following sources:

1st. The interchange of experiences and opinions between the members of the Commission, especially those who have had ample opportunities of treating the disease, viz.: Drs. Falligant, Morse, Orme, Price, Murrell, Harper, and Holcombe.

2d. Conversations held with, letters received from, or written reports made by the following physicians: Drs. Richard Angell, A. Dupaquier, E. A. Murphy, I. S. Piquette, M. F. Mann, Robert A. Bayley, and I. Matthison, of New Orleans, La.; F. A. W. Davis, of Natchez, Miss.; A. O. Hardenstein, of Vicksburg, Miss.; J. Hough, of Jackson, Miss.; Fraer and Curtiss, of Chattanooga, Tenn.; Quinby, of Memphis, Tenn.; Knorr, of Savannah, Ga.; H. M. Cleckley, of Charleston, S. C.; C. E. Foster, of Marietta, Ga., and several others.

3d. The homœopathic literature of yellow fever, which, we are sorry to say, is much scantier than can be justified when we consider the magnitude of the subject and the number and experience of our physicians. There are a few short sketches and letters on the disease here and there in our journals; but elaborate essays on yellow fever can only be found in the *North American Journal of Homœopathy* (1878), by Dr. L. A. Falligant; in *L'Art Médical* (1858 and 1859), by Dr. Adolphe Cartier, of Paris, formerly of New Orleans; and in the *North American Journal of Homœopathy* (1853 and 1856), and in the *Transactions of the American Institute of Homœopathy* for 1868, by Dr. William H. Holcombe.

We cannot better begin an account of the treatment than by presenting a very clear definition of the disease.

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Definition of Yellow Fever.

Yellow fever is an acute febrile disease, differing from all others in its causes, symptoms, and lesions; excited by some specific effluvial poison, the nature of which is at present unknown; infectious and sometimes apparently contagious; having certain geographical limits, but transmissible by fomites to far-distant places; incident especially to the large cities and towns on the sea-coasts of tropical America, and following the great water routes of commerce; developed into epidemic activity by a combination of factors, of which a long-continued high temperature (above 72°) is the best established, and extinguished by a succession of frosts; a disease of one continuous paroxysm of fever, lasting from twenty-four to seventy-two hours, with remarkably high temperature, and followed by a stage of depression or collapse, with symptoms of blood-poisoning, hæmorrhages, jaundice, suppression of urine, and black vomit; attacking all ages and races, but with differing degrees of intensity; manifesting a very great diversity of phenomena at different times and in different places, and rarely ever occurring more than once in the same patient.

The above is perhaps as accurate a definition of yellow fever as can be found in the present state of our knowledge. To treat this or any other disease successfully on the homœopathic principle we must be led to our remedy by a consideration of the totality of the symptoms occurring in each individual case. But we cannot study individual cases advantageously until we have gone through a series of generalizations by which we arrange, compare, connect, classify, and utilize the innumerable elements of our knowledge. One does not study geography by beginning with the villages, creeks, little hills, etc., of a country, but he gets clear conceptions of the whole nation, the states, counties, mountain ranges, the course of rivers, etc., so that from great and fixed points he can radiate in every direction and penetrate into all the minutiæ of the earth's surface. In this spirit we shall report upon the prevailing treatment of yellow fever by homœopathic physicians under the following subdivisions:

I. The treatment of simple yellow fever.

II. The treatment of yellow fever with complications.

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I. The Treatment of Simple Yellow Fever,

Answering to the definition of the disease above given, again subdivides itself, very properly, on account of its changing phenomena, into the treatment of three pretty well-marked stages:

1. The treatment of the first or febrile stage.
2. The treatment of the second, or stage of exhaustion.
3. The treatment of the third, or stage of collapse.

1. The great landmarks of the first or febrile stage by which we are to be guided in the selection of a remedy are the following:

Very high fever, preceded or not by a chill, with extremely severe pains in the head (occipital region predominantly), back, and limbs. Temperature from 103° to 107°; great restlessness and malaise, accompanied sometimes with mental anxiety and fear of death; vomiting of ingesta and bile; red, watery eyes, suffused countenance; sleeplessness or stupor with intense heat; delirium, sometimes violent, sometimes muttering; skin, very hot and dry, but very easily excited to perspiration.

The chill, or cold stage, preceding the febrile movement is so often absent, and so generally moderate when it does exist, that but few of our physicians make any mention of it. A few drops of Camphor tincture or of Veratrum album will dissipate the coldness and bring on an earlier reaction than would have otherwise occurred.

In selecting a remedy for the first stage of yellow fever the homœopathic physician searches among those medicines which produce the greatest febrile movement, high temperature, and all the associated symptoms on the healthy human system. Our means of resisting the disease will be exactly measured by the power of our remedies to produce similar morbid phenomena and our knowledge of that power. The homœopathic Materia Medica is a vast mine of therapeutic riches which we have only very partially worked. Further study and observation may bring to light the curative uses of medicines of which we now know almost nothing. The present remedies reported by our school as valuable in this disease stand as follows, the order on the list representing the supposed relative merit of the remedies: Aconite,

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Belladonna, Bryonia, Gelseminum, Veratrum viride, Baptisia, Cimicifuga, Eupatorium perfoliatum.

Yellow fever cases, although having certain great features in common, differ immensely among themselves, and the fact is equally true of our homœopathic remedies. To individualize the case by noting how it differs from other cases, and to differentiate the remedies so as to select the one nearest resembling the given case in its pathogenetic power, is the task of the homœopathic physician. How much has already been done in this line may be seen in the following statement of symptoms, or rather groups of symptoms, which have been verified in the curative use of the above-mentioned remedies in febrile diseases of high grade everywhere, and especially in yellow fever:

Aconite.—Fever of the catarrhal type. Hot, dry skin, rapid pulse; thirst for great quantities of water; desire to be uncovered; distress in the cardiac region; extreme restlessness, constantly changing position; low-spirited and apprehensive; fear of death. Ephemeral and synochal types of fever.

Belladonna.—Very high fever and corresponding temperature; severe headache, with throbbing of bloodvessels; bright-red face and eyes; great intolerance of light and noise; nervous excitement, with loquacious delirium; dry, hot tongue and throat; dilated or oscillating pupils; very hot head and body, with cold extremities; epigastric pain; perspiration suddenly disappears and as suddenly returns; sudden changes of color from red to pale, and *vice versa*. Meningeal types of disease.

Bryonia.—Irritable and peevish state of mind; head aches as if it would split open; high fever, with dark-red, hot, puffy face; vertigo or nausea from sitting up; pain on movement, which inclines the patient to lie very still; bitter, sour taste; dry, hot lips, foul tongue; vomiting of bile; yellowness of skin; severe abdominal pains. Especially adapted to bilious, typhus, and typhoid types of disease.

These three invaluable remedies are mentioned by every physician who treated the yellow fever last year. The success of our school was so great, and the pressure of public opinion became so decided, that the allopathic fraternity resorted to the free use of Aconite, always, however, in too large doses to get

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the benefit of any homœopathic action. They were satisfied with the theory that *Aconite* is a vascular and nervous depressant, and as they wanted to depress the vascular and nervous systems they supposed they had nothing to do but to pour down the *Aconite* until a suitable point of depression was reached. Ignorant of the scientific precision of the homœopathic law, they gave *Aconite* to cases requiring *Belladonna* or *Bryonia*, and thus often failed to produce any effect whatever. Woe to their patients when they strike upon the felicitous idea that Belladonna is a good thing for yellow fever, and pour down that terribly active drug in their massive doses and in their random style.

Aconite is the least valuable of the three remedies, because it is only adapted to the very onset of the fever. It produces no local inflammation, no profound organic lesions, no blood-poisoning, no great morbid changes of secretion, and the occasion for its homœopathic use in this fever soon passes away. *Belladonna* and *Bryonia* correspond to successively deepening shades of morbid action, and it may be said in general terms that if Aconite is suitable on the first day, Belladonna will be probably called for on the second, and Bryonia on the third day of the febrile stage.

Some physicians recommend us not to forget two very valuable remedies which may be more appropriate in certain cases than the polychrests above mentioned, viz., *Gelseminum* and *Veratrum viride*. The guides to their selection are stated to be the following:

Gelseminum.—Fever of the remitting type. Stupefaction of mind. Pain in the back of the head and neck, and in the cervical muscles. Difficulty of keeping the eyelids open. Prostration of the whole muscular system. Intense fever, with stupor rather than restlessness. Cerebral oppression, with symptoms of impending convulsions.

Veratrum viride.—Intense fever, with occipital pains, and vascular and nervous erethism, threatening convulsions, especially in children. Development of local inflammations. Præcordial distress. Vomiting, with cold sweat on the face. Great and sudden changes in the pulse.

One of our physicians called attention to the three following

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remedies as having been decidedly useful in a few cases and promising greater things if carefully studied.

Eupatorium perfoliatum.—Fever of the intermittent or remittent type. Violent headache, with throbbing, and soreness of the scalp. Great soreness and aching of all the muscles. Vomiting of bile, with trembling over the whole body. Eyes and face look as if suffering from a severe influenza. Tenderness or pain in the gastro-hepatic region, and deepseated pains in the bones.

Cimicifuga.—Fever of the dengue type. Very violent pains in the small of the back. Stiff neck, and universal muscular soreness. Pains like electric shocks here and there. Sharp pains from the neck to the vertex. The mind melancholy, indifferent, taciturn.

Baptisia.—Fever of the typhus or typhoid type. Patient stupid and incoherent, cannot collect himself. Face dull red, listless, besotted. Tongue brown and dry. Breath very offensive, almost putrid. Falls asleep while talking to him. Exceedingly weak. Given from the beginning, this remedy might arrest much of the blood-poisoning process going on in yellow fever.

There were but few intercurrent remedies called for whilst combating the first or febrile stage of yellow fever. The vomiting of the ingesta and bile, although it always excited the apprehension of the patient and his friends, was a matter of no special significance. It generally stopped of itself, or, if obstinate, was readily controlled by a few doses of *Ipecac.* or of *Apomorphine.* Nervousness and restlessness at night was at this stage often quieted by a few infinitesimal doses of *Coffea* or *Belladonna.*

The Adjuvants of the First or Febrile Stage.—The purgative or the enema stands first. The popular prejudice in favor of a strong purgative as soon as a patient is attacked with yellow fever, is tremendous. It is supported by the unquestionable fact that fever is sometimes lessened and headache relieved by obtaining free discharges from the bowels. The most of patients, although sending for a homœopathic physician, took the traditional dose of Castor oil and a hot mustard foot-bath before he arrived. If the doctor gave the strictest injunctions against a purgative one would be administered surreptitiously by anxious

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friends before his next visit. The best compromise the doctor could sometimes make would be to give copious enemata every four or six hours until two or three satisfactory discharges were obtained, and the prevailing sentiment of the profession is that they were decidedly useful, although a few physicians claim to have excluded both purgative and enema from their practice in this stage without the least detriment to their patients.

A hot mustard foot-bath and an extra blanket or two thrown over the body was another *sine quâ non* with the popular mind. It was generally acquiesced in by homœopathic physicians, although it was really seldom necessary, for the yellow fever patient breaks into a perspiration on the first day without the least difficulty, and later in the disease, in bad cases, when a gentle perspiration is the one thing needful, the boasted hot mustard foot-bath is seldom efficacious. An occasional tepid foot-bath is very quieting to the nervous system.

Throughout all the Southern country hot orange-leaf tea has been so long used as the standard drink in yellow fever that it ranks in popular estimation with the Castor oil and mustard foot-bath. It is really an excellent drink. It is not more medicinal than the ordinary mixed green and black tea which we give our patients in fever, but it is more suitable in a medical point of view. Instead of stimulating or exciting, it is decidedly soothing, and even soporific. It promotes a gentle perspiration, and keeps the nervous system quiet. The orange-flower water sold in the drug-stores put into hot water has about the same effect as the tea from the green leaf.

Extraordinary efforts were made by the allopathic profession in the last epidemic to reduce the very high temperature of the yellow fever patient, by means of hydropathic appliances, especially the ice-pack. Cold water has been repeatedly used in yellow fever by ablution, immersion, affusion, wet sheets, etc., in various localities and at different times, and many physicians during the last eighty years have reported favorably on its employment. But so many counter-reports, adverse to its efficacy, have been made by equally respectable authorities, that the question is entirely unsettled. The homœopathic profession is generally in friendly alliance with hydropathic measures, but none of

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our physicians during the late epidemic appear to have given them a trial. They seem to have relied upon the internal remedies to lower the temperature and control the disease, leaving it an open question for future observers how much or how little assistance we may derive from the use of the water cure, either alone or in conjunction with our mode of specific medication.

2. *The Treatment of the Second Stage of Yellow Fever.*

Passing in most cases by insensible gradations from a state of great apparent, but of really little danger, the patient enters the second stage of yellow fever, in which he may seem to be doing very well to an inexperienced eye, while in fact he may be in an alarming and even hopeless condition. The homœopathic physician, never theorizing about the disease or the action of drugs, but guided by a great law of cure, wants nothing but a genuine picture of the morbid phenomena existing in the case as a guide in his selection of the remedy which produces similar effects upon the human system.

The group of symptoms which, variously arranged like the pieces of the kaleidoscope, make up the phenomena of the second stage is about as follows:

Pulse becomes natural again, or weak and irregular, or in some cases very slow, 40 or even 30 to the minute. Patient expresses himself as well; wants to eat or drink; would commit great imprudence in diet, or talking, or throwing off cover, or getting out of bed, if permitted; apathy, indifference, no realization of danger; at night sleeplessness, sometimes a terrible pervigilium, restlessness, great nervousness, sour or acid eructations; epigastric pains; tenderness on pressure over the liver and spleen; vomiting of ingesta, of a claret-colored water, of mucous substances specked with blood, of pure blood, of floating shreds like bees' wings, of brown vomit, of genuine coffee-grounds, black vomit; excessive irritability of stomach; black stools; hiccough. Sudden and unaccountable changes of color; alternate flushings and paleness; yellow tint of the sclerotica; increasing yellowness of the surface, even in some cases to the deepest jaundice and hæmorrhages; oozing of dark blood from the gums, nose, eyes, ears; hæmorrhage from the uterus, bowels, or kidneys;

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petechiæ; decided albuminuria; scanty or suppressed urine, followed by coma or convulsions; secondary fever, from local congestions or inflammations.

Every homœopathic physician who treated yellow fever last summer reported *Arsenicum album* as the remedy *par excellence* for the formidable group of symptoms constituting the second stage of yellow fever. The concurrence in pointing out one of the snake poisons, *Lachesis* or *Crotalus*, was almost as emphatic; and, on the failure of these remedies, many physicians pointed to *Carbo vegetabilis* as the best and last hope of the patient. We will make this clear by abstracting from the pathogenesis of these remedies the keynotes of their action upon the healthy human system.

Arsenicum album.—Intense anxiety and restlessness, especially between midnight and morning; constantly changing place, wants to go from one bed to another; delirious, with desire to escape; yellow sclerotica; ciliary vessels deeply injected; distressed expression of countenance; face deep dull red, or gray and ashy; nosebleed; bleeding gums; tongue red or brown; excessive thirst; irritability of the stomach; pain from right side to left under the diaphragm. Fruitless retching; vomiting of brown turbid matter, of black blood; discharge of blood from kidneys and bowels; pulse quick and small; external coldness and internal heat; petechiæ; extreme prostration; exhaustion from the slightest exertion.

Lachesis.—Delirious, loquacious, disposed to quarrel; slow, difficult speech; rush of blood to the head; yellow conjunctiva; yellow or purplish tint of the skin; blood dark, non-coagulable; small wounds bleed very much; perspiration stains yellow; lips dry, cracked, and bleeding; sour eructations; heartburn; vomiting, with palpitation; irregular, weak pulse; urine almost black; persistent sleeplessness; fainting; trembling all over; sudden flushes of heat; sensitiveness about the neck and pit of the stomach; worse when waking from sleep.

Crotalus horridus.—Utter apathy; confused speech; disconnected answers, with coldness of the skin and rapid pulse; blood flows from the eyes, ears, and nose, indeed from all the orifices of the body; face yellow, or sometimes of a leaden color; thirst;

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sour, acrid eructations; scraping, rancid sensation down the œsophagus to the stomach; extreme nausea and vomiting on the least exertion; vomiting of bile, of blood; swelling of the whole abdomen; enlargement of the inguinal glands; bloody stools, sometimes involuntary; hæmorrhage from the urethra; menses anticipate; hoarse, weak, rough voice; pulse slower than natural (60 beats), or intermitting and scarcely perceptible; deep yellow color of the whole body; extreme depression of the vital powers; spasms; death by syncope.

Both of the above snake poisons present admirable pictures of the second stage of yellow fever. *Lachesis* is the best known and the best proved on the human system; but the blood-poisoning of *Crotalus* has been much more thoroughly studied, because that serpent is a native of our own country. The East Indian observers of the effect of the bite of the *Lachesis* would, no doubt, give us a very similar picture of its hideous ravages on the human frame. Dr. Davis, of Natchez, whose opinion on any subject connected with yellow fever is entitled to great respect, gives a decided preference to the *Lachesis*.

Carbo vegetabilis.—Pupils do not respond to the light; hæmorrhage from the eyes; repeated nosebleed, with small, intermittent pulse; hippocratic face, grayish-yellow; red cheeks, covered with cold sweat; bloody saliva; rancid eructations; enormous flatulence; burning in the stomach, with vomiting of blood; all discharges fetid and offensive; menorrhagia; capillary stagnation; cyanosis; threadlike pulse; sleepless, intensely restless, from suffocating sensations; icy coldness of the body; ecchymoses.

Phosphorus is a remedy barely mentioned by two of our physicians as covering some symptoms of the second stage of yellow fever; but the pathogenesis of it is so rich in yellow fever symptoms that it deserves a thorough study. Its power of producing acute yellow atrophy of the liver, fatty degeneration, malignant jaundice, albuminous urine, the hæmorrhagic diathesis, and many of the symptoms of *Arsenic* and *Crotalus*, shows that it is a remedy of great homœopathic applicability to yellow fever.

Some cases carried over into the second stage so many symptoms of the first, that several physicians recommended the prolonged use of *Belladonna* or *Bryonia*, or the employment of that

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great ally of *Bryonia* in the typhus and typhoid states, the *Rhus toxicodendron*. Although the remedies above mentioned covered so well all the leading symptoms of the disease, even in a pathological sense, yet some features were so distressing and persistent that intercurrent remedies were frequently employed, and with excellent results, as follows:

For the Stomach Symptoms.—In the milder cases *Ipecac.* and *Apomorphine* were found efficient as in the first stage. Two physicians reported *Nux vomica* as of superior value. So long as the intensely irritable stomach was the predominant symptom of the second stage *Arsenic* was more suitable than its congeners. *Veratrum album* and *Tartar emetic* are reported to have rendered signal service in vomiting followed by intense prostration.

Creasote and *Hydrocyanic acid* maintained their old reputation as valuable remedies under certain conditions, and in small but not infinitesimal doses. Dr. Hardenstein, of Vicksburg, introduces to us a new remedy for this stage, which, he says, is exceedingly efficacious soon after black vomit.

Sulphate of cadmium.—The meagre proving we have shows it to resemble *Arsenic* and *Veratrum*. But when the matters ejected by the stomach warned of impending or actual blood-exudation into that organ, there was no remedy so much recommended as *Argentum nitricum*, first employed homœopathically by Drs. Davis and Holcombe in the great epidemic of 1853 at Natchez, Miss. This remedy had been previously used by the allopathic school, but in such large doses and in combination with other remedies, especially Opium, that its real merits were entirely obscured, and it failed to obtain the confidence of the profession.

For the Hæmorrhages.—*Arsenic*, *Crotalus*, *Phosphorus*, and *Argentum nitricum* certainly covered remarkably well most of the hæmorrhagic symptoms. *Acetate of lead*, $\frac{1}{30}$th of a grain, was recommended by Dr. Richard Angell as an efficient remedy, an instance of a very common occurrence that allopathic remedies will produce the same effect in the hundredth or two hundredth part of the quantity generally given by the old school. *Sulphuric acid*, however, stands next to the four remedies mentioned above as what our theoretic friends would call an astrin-

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gent. *Gallic acid* rendered excellent service in oozing of blood from the gums. *Terebinthina*, *Millefolium*, *Erigeron*, and *Lycopodium* are extolled as remedies against hæmorrhage from the kidneys and bladder. Indeed, *Lycopodium* covers many of the intestinal and urinary troubles of the second stage of yellow fever. *Arnica* is not to be overlooked in hæmorrhagic and typhoid states. *Sabina* is reported to have produced its usual good effect upon the hæmorrhages from the womb, so common in this disease. It is singular that two remedies, which are supposed to produce very great capillary contraction, viz., *Ergot* and *Hamamelis*, have not as yet acquired or maintained any considerable reputation against the hæmorrhages of yellow fever.

For the Urinary Difficulties.—Albuminuria is so constant, important, and dangerous a symptom of yellow fever that it is somewhat to be regretted that our physicians have not directed their attention to its removal, if possible, by homœopathic specifics. *Euonymin*, *Helonin*, *Cuprum*, and *Mercurius corrosivus* have repeatedly diminished the quantity of albumen in the urine, and are worthy of trial. One physician reports the use of *Euonymin* as an intercurrent remedy with encouraging results. *Cuprum* and *Mercurius corrosivus* might be found especially valuable, as they produce so many of the hepatic and intestinal symptoms frequently met with in the second stage of yellow fever.. *Cuprum* might often take the place of *Arsenic* or *Veratrum* where those remedies seem to be indicated.

Retention of urine was a very common symptom, and the distension of the bladder, unable to expel its contents, gave rise to many distressing reflex phenomena. Vomiting, sleeplessness, jactitation, abdominal pains, and even delirium and convulsions have been known to cease after the evacuation of a long-distended bladder. *Hyoscyamus*, *Opium*, and *Stramonium* are reported to have rendered service, but the use of the catheter, even in very small children, is the easiest and surest remedy. The injection of ice-water into the rectum was sometimes successful.

Difficulty of urination, tenesmus, scanty discharges, frequently repeated, etc., were symptoms of great significance. This state sometimes, but not always, preceded the total suppression of urine, one of the most dangerous symptoms of the second stage.

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Cantharis was the most frequently recommended remedy. *Lycopodium* and *Terebinthina* were valuable in some cases. Total suppression is so grave a symptom that we need not be surprised at finding no uniformity of recommendation. *Chimaphila, Apis, Apocynum, Prunus spinosa, Cannabis indica, Sulphur, Citric acid,* and other remedies are reported as having acted favorably in a few cases; but without depreciating the mighty value of homœopathic specifics, when we have accurately discovered and can handle them, we must say that the adjuvants to our practice, presently to be described, seem to have been more generally successful in these cases.

Adjuvants in the Second Stage of Yellow Fever.—Alcohol, in some shape, was almost invariably recommended, and found useful. It is a fact that the poison of yellow fever produces many symptoms remarkably resembling those of the bite of serpents. It is another fact that alcohol, abundantly employed and without medicine, will cure the effect of snake-bites. Put these two facts together, and we are almost led to believe that alcohol in yellow fever exerts something more than a merely stimulating influence, obviating the tendency to death, but that it has some peculiar medicinal or chemical power, more or less antidotal of the yellow fever poison. In those terrible sinking spells of nervous prostration which often succeed the disappearance of the febrile stage, a few teaspoonfuls of champagne on ice acted like magic, restoring strength, comfort, and courage, and promoting quiet and healthful sleep. Brandy punches became useful at a later stage, and many desperate cases are supposed to have been saved by the unsparing use of alcoholic liquors.

While purgation in this stage is the height of folly, irritating the intestinal tract and lowering the vitality of the patient, the daily or more frequent use of the *enema* was attended with immense advantage. Without stimulating the mucous membrane to additional secretion, and without irritating more than one-twentieth part of the intestinal tube, the enema filled at once the most important offices; it rid the patient of the enormous quantity of flatus which tormented and endangered him, and it restored the reversed peristaltic action of the intestines to its natural course. It was one of the surest methods to prevent or relieve vomiting.

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It was also an efficient means of introducing nourishment and stimulus into the system when the stomach had ceased entirely to be an avenue of absorption.

Some of our physicians report, that after having failed to relieve the terrible pervigilium of this stage, threatening the development of cerebral symptoms, with *Coffea, Hyoscyamus, Belladonna, Ignatia, Platina*, and other hypnotics of our school, they obtained satisfactory results by the injection of *Bromide of potassium*, or Battley's sedative, in suitable doses, into the rectum.

Milk and lime-water, half and half, in tablespoonful doses, often repeated, recommended in the old epidemics of New York and Philadelphia before homœopathy was born, has held its sway ever since as a good thing for the irritable stomach, demanding at the same time an alkali and a nutrient, although, no doubt, our ultra homœopath can find in the pathogenesis of *Calcarea carbonica* enough similar symptoms to justify the prescription.

One of our physicians gave, he says, with excellent effect the *Bicarbonate of soda* and *Nux vomica*, in moderate doses, for the vomiting of the second stage. But of all the empirical remedies employed for this annoying symptom, the *Sulpho-carbolate of soda*, in from 2 to 5 grains at a dose after each act of vomiting, unquestionably bore off the palm. The subcutaneous injection of *Ergotin*, strongly recommended by some allopaths for the black vomit, was not resorted to by any of our school. The suppression of urine was very greatly relieved by the use of various adjuventia. The old *Sweet spirits of nitre* had its advocates and its triumphs; but the decoction of watermelon-seed, if the stomach could tolerate it in sufficient quantity, was a most reliable remedy. All sorts of external measures were employed, some of them with apparent advantage. The application of poultices to the hypogastric region, flaxseed poultices, garlic poultices, onion poultices, sliced lemons, and various other substances; dry cupping over the loins, friction of the loins with Spirits of turpentine, Oil of juniper, and other supposed diuretics; injections of ice-water into the rectum; the use of gin toddies, etc., were not entirely discarded from the therapeutic measures of some good homœopathic physicians.

Many homœopathic physicians made free use of ice and ice-water to the abdomen, breast, and throat of patients suffering

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with the terrible nausea and anguish of the second stage. It was supposed to reduce the temperature, and by a revulsive impression to be soothing and beneficial to the nervous system. Others contended, and with great show of reason, that as a yellow fever patient was always safest when in a gentle perspiration, it was best to cover up lightly or put the patient between blankets, to give tepid foot-baths, and in every way encourage the natural action of the skin, and patiently continue this kind of treatment even into collapse rather than abandon it for the ice treatment, which was antipathic in principles, and at most very uncertain in its result. Ice and ice-water were allowed internally by those physicians who rejected their external use.

3. *The Treatment of the Third or Collapsed Stage.*

The symptoms are here so formidable that the physician frequently stands in despair, and questions the utility of any treatment whatever. And yet patients have often recovered from apparently hopeless conditions by the unremitting exertions of friends, or even by the unaided efforts of nature after all hope had been abandoned by physicians and attendants. Imagine a patient lying for hours, and even days, with the following symptoms, and then getting well:

Skin of a dirty yellow or almost bronze color; large petechial spots; slow oozing of blood from every orifice of the body; black vomit; bloody, black, or totally suppressed urine; extreme jactitation; total apathy or muttering delirium; hiccough; cold extremities; feeble and flickering pulse, convulsions; involuntary discharges of black matter and utter prostration, sometimes with præcordial anguish and undying irritability of the stomach.

For this terrible combination of symptoms the homœopathic physician points, with still lingering hope, to four remedies: *Arsenicum, Crotalus, Carbo vegetabilis,* and *Hydrocyanic acid.* The state so much resembles the collapse of Asiatic cholera that *Secale cornutum* and drop doses of the TINCTURE OF ACONITE, as recommended in that disease, are not to be forgotten. The adjuvants mentioned for this stage are champagne, freely administered, injections of beef tea and brandy, and frictions with heated oil, with or without the admixture of Quinine. As allopathic physicians also report recoveries from the collapsed stage,

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under all kinds of heterogeneous and contradictory medication, it is evident that nature herself has had a large share in the astonishing reactions which have taken place.

II. Treatment of Yellow Fever with Complications.

The most extraordinary peculiarity of yellow fever is that it will amalgamate with almost every other disease. It will blend with intermittent fever and remittent bilious fevers, with scarlet fever and small-pox, with dysentery and cholera, with influenza and rheumatism, indeed with any disease that may be prevailing. The yellow fever generally succeeds in blending other diseases to its own type and getting the entire ascendency; but sometimes the symptoms run fairly together, or the yellow fever only crops out at the last, as when a cholera patient dies of hæmorrhages or a small-pox patient with black vomit.

If there ever is an occasion when the homœopathic physician is justified in alternating remedies it is in one of the clear cases of admixture of two diseases. Shall a patient's life be intrusted to *Colocynth* alone because he has frequent greenish and bloody slimy discharges, with horrible colicky pains, causing him to bend double, when at the same time he has an intense fever, with a temperature of 105°, which almost stupefies and paralyzes the whole system, and his physician knows he has a ferment in his blood working to its disintegration and the production of hæmorrhages and black vomit? It is the glory of homœopathy that it is rich in resources for all the immense complexity of symptoms which marks this worst of febrile diseases.

Yellow fever is a febrile disease of one paroxysm only, and there is no such thing as an intermittent yellow fever, or a bilious remittent yellow fever. Whenever bilious symptoms proper or periodicity of type present themselves, paludal or malarial diseases have grafted themselves on the yellow fever stock, or *vice versa*, and it is a compound, complicated malady, and likely to be very severe. This is the form which wrought such fearful havoc in Vicksburg, Memphis, Grenada, and other places specially subject to the visitations of bilious remittent fevers. The treatment of this hybrid disease has not been scientifically formulated. It needs a special consideration, which has not yet been given to it in the reports of our physicians. Theo-

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retically *Gelseminum* and *Eupatorium perfoliatum* are the best remedies for the febrile paroxysms, and *China*, *Arsenicum*, and *Natrum muriaticum* ought to work wonders in the short intervals of apyrexia; but the facts have not yet been brought up to maintain the position.

Those who are least acquainted with the yellow monster of the tropics will be the loudest to condemn the use of *Quinine* in large doses, but the majority of the homœopathic physicians have found it exceedingly useful by preventing fatal congestions in these cases of yellow fever modified by the malarial poisons. True the allopaths gave it in enormous doses and failed; but, it is responded, their doses were too great, and it was preceded, combined with, or followed by other powerful and deleterious drugs, and was part of a practice generally irrational, and it is contended that when the febrile paroxysms were managed by specific medicines, and the Quinine introduced in moderate doses, especially by injection and inunction, the patient had the very best-known chances for his life.

Lesions of the cerebro-spinal system have not been discovered in some epidemics, and are not exhibited by a great many patients in every epidemic. It is a question whether the cerebro-spinal meningitis, which was so common in the yellow fever of last year, was a simple consequence of the high temperature of the blood and the rapid chemical changes induced upon the nerve-cells, or a genuine complication of an idiopathic brain disease with the yellow fever. The intense heat of the summer producing many pure cases of cerebro-spinal meningitis entirely unconnected with yellow fever would favor the last hypothesis. It will take a great many accurate observations to get at the truth on this point, but in the meantime we may feel proud that our Materia Medica offers us so many magnificent brain remedies, which rendered us excellent service under these trying circumstances, especially *Belladonna*, *Gelseminum*, *Cimicifuga*, *Apis*, *Glonoine*, *Opium*, *Corallium*, *Cicuta*, and *Zincum*. It is unnecessary to specify the keynotes of these remedies, or the adjuvants which are as useful here as in the uncomplicated diseases of the cerebro-spinal system.

The hygienic management of yellow fever, including diet and nursing, is almost as essential as the medicinal treatment, and in

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this respect we are glad to say that the homœopathic physicians, as a body, have entirely emancipated themselves from the superstitious traditions of the old nurse and the antiquated theories of the old doctor. Their patients enjoyed the free ventilation of their rooms, the use of cold water according to the demands of nature, light covering, carefully selected food in small quantities and at regular intervals, pleasant medicines, and cheering influences about them. All this was strikingly contrasted with the close and hot rooms, the suffocating cover, the violent medication, and the horrible system of starvation which ignorant people inflicted on each other, and which the unenlightened portion of the allopathic profession inflicted on the people.

We have said nothing about the doses or the attenuations in which the remedies for yellow fever were administered. Some physicians gave no information on the subject, and the others differed as widely as possible, some using the mother tinctures and others the 30th attenuation exclusively. The great majority employed the low dilutions, and the genuine success of all confirms the fact, which many have long believed, that the homœopathic cure is dependent, not upon the material quantity, but on the dynamic quality of the remedies given. We refrain from all criticism on this subject, because the *modus operandi* and the suitable doses of homœopathic medicines are still unsettled questions. We are yet in the preliminary stage of collecting the facts, and until we are ready to make inductions, we think the most reasonable motto is this: the fixed law for the selection of the remedy, and the widest liberty of experiment for determining the dose.

Respectfully submitted.

W. H. HOLCOMBE, M.D., New Orleans, *Chairman.*
T. S. VERDI, M.D., Washington City, *Secretary.*
B. W. JAMES, M.D., Philadelphia, Pa.
W. L. BREYFOGLE, M.D., Louisville, Ky.
J. P. DAKE, M.D., Nashville, Tenn.
E. H. PRICE, M.D., Chattanooga, Tenn.
F. H. ORME, M.D., Atlanta, Ga.
L. A. FALLIGANT, M.D., Savannah, Ga.
L. D. MORSE, M.D., Memphis, Tenn.
W. J. MURRELL, M.D., Mobile, Ala.
T. J. HARPER, Vicksburg, Miss.

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LXXIII.

CONSTITUTION AND BY-LAWS.

CONSTITUTION.

(ADOPTED JUNE 10TH, 1874.)

ARTICLE I.—NAME AND OBJECT.

THIS Association shall be styled the AMERICAN INSTITUTE OF HOMŒOPATHY, and its object the improvement of homœopathic therapeutics and all other departments of medical science.

ARTICLE II.—MEMBERS.

The Institute shall be composed of three physicians who are already members, and of such others as may be hereafter chosen in conformity with the By-Laws.

ARTICLE III.—OFFICERS.

The officers of the Institute shall be a President, Vice-President, a General Secretary, a Provisional Secretary, and a Treasurer, with such other officers as shall be designated by the By-Laws, to be chosen at such time, in such manner, for such a period, and with such duties as these By-Laws shall ordain.

ARTICLE IV.—SEAL.

The Institute shall have and use one common seal, with a suitable device and inscription.

ARTICLE V.—AMENDMENTS.

This Constitution may be altered or amended by a vote of two-thirds of all the members present at the regular annual meeting, provided that notice of such alteration or amendment shall have been given in writing at a previous annual meeting of the Institute.

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BY-LAWS.

(ADOPTED JUNE 20TH, 1878.)

ARTICLE I.—MEETINGS.

THE Institute shall hold at least one session in each year, at such time and place as may be determined upon from time to time.

ARTICLE II.—OFFICERS.

SECTION 1. The officers shall be elected by ballot at each annual session of the Institute, and shall enter upon their respective duties the first day of January following.

SECTION 2. The officers of the Institute, viz., the President, Vice-President, General Secretary, Provisional Secretary, and Treasurer, shall constitute an Executive Committee, which shall arrange the business of the meetings, attend to matters of business not otherwise specially provided for, and perform such other duties as may by vote of the Institute devolve upon it.

SECTION 3. The General Secretary shall be paid an annual salary of five hundred dollars.

ARTICLE III.—DUTIES OF OFFICERS.

SECTION 1. The President shall preside at the meetings of the Institute, and perform the duties usually pertaining to his office, together with such others as may by vote of the Institute devolve upon him. He shall sign all certificates of membership. He shall deliver an address at the opening of each session on the progress of homœopathy during the year past, and make such suggestions as he may deem necessary for the Institute to take action on during the session.

SECTION 2. The Vice-President shall perform the duties of the President in his absence or disability.

SECTION 3. The General Secretary shall keep a record of the proceedings of the meetings, conduct the correspondence of the Institute, issue notices of meetings, notify candidates of their election, sign certificates of membership, and perform such other duties as the Institute may direct. It shall further be the duty of the Secretary to send to each homœopathic journal published in the country, within two months after the adjournment of an annual meeting, a list of the officers of the ensuing year and the members of its bureaus, and the titles of the subjects selected by said bureaus.

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SECTION 4. The Provisional Secretary shall assist the General Secretary, and in his absence perform his duties:

SECTION 5. The Treasurer shall receive all money belonging to the Institute, and make all disbursements under the recommendation of the Executive Committee. He shall furnish at each annual meeting a written report of the condition of the finances.

ARTICLE IV.—CENSORS.

At each annual session the Institute shall elect, by ballot, a board of five censors (three of whom shall constitute a quorum), who shall receive and examine the credentials of candidates for membership, and report to the Institute for election such as may be found properly qualified. The censors shall enter upon their duties on the first day of January following their election.

ARTICLE V.—MEMBERSHIP.

SECTION 1. Candidates for membership shall present to the Board of Censors a certificate of three members of the Institute that the applicant has pursued a regular course of medical studies, according to the requirements of the existing institutions of this country, and sustains a good moral character and professional standing. Such certificate shall state when and where the applicant obtained a diploma. If found qualified the candidate may be elected a member. No person shall be considered a member, however, before paying an admission fee of five dollars, and the annual dues, which shall entitle him to a certificate of membership.

SECTION 2. Any physician properly accredited as a delegate, shall be admitted during the session of the Institute to all the privileges of members, except voting and eligibility to office, on the following basis:

First. From every association composed of more than fifty members from different States, two delegates, with an additional delegate for every twenty members.

Second. From every State Society, two delegates, with an additional delegate for every twenty members.

Third. From every county or local society, one delegate.

Fourth. From every college, hospital, asylum for the insane, or dispensary, actually established, one delegate.

Fifth. From every medical journal published one delegate.

Such delegates shall be elected for the term of one year.

SECTION 3. Any foreign physician may be elected a Corresponding Member of the Institute at any annual meeting, and shall have all the privileges of members except voting and eligibility to office.

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SECTION 4. The Institute may, at any annual meeting, elect as Honorary Members, not to exceed five in one year, any foreign physicians who may be judged worthy from their superior attainments in medicine; provided that the names of persons proposed for Honorary Membership shall have been presented at a previous annual meeting. Such Honorary Members shall have all the privileges of members except voting and eligibility to office.

SECTION 5. All members of the Institute who have maintained twenty-five consecutive years of membership shall be considered *Senior Members*, and be exempt from the payment of annual dues; and the names of such members shall be printed first in the list of members, in capital letters.

SECTION 6. Of State Societies represented in the Institute, the Presidents shall be *ex-officio* Vice-Presidents, and the Recording Secretaries shall be *ex-officio* Corresponding Secretaries of the Institute, and these officers shall communicate through the various bureaus any facts or information concerning the condition of these societies, and the progress of medicine and homœopathy in their several States.

SECTION 7. The Institute may, at any annual meeting, elect as Honorary Associate Members, not to exceed three in any one year, any persons, not members of the medical profession, who have in any way been of special service to science or humanity, and particularly those who have been special patrons of homœopathy; and said Honorary Associate Members shall have all the privileges of Honorary Members.

ARTICLE VI.—DUES.

SECTION 1. Members shall pay annually the sum of five dollars toward defraying the expenses of the Institute. The *Proceedings of the Institute* will be sent to those members only who have paid their dues.

ARTICLE VII.—BUREAUS AND COMMITTEES.

SECTION 1. The following BUREAUS shall be appointed as hereinafter provided for:

a. Materia Medica, Pharmacy, and Provings.

b. Clinical Medicine, embracing Diagnosis and General and Special Therapeutics.

c. Obstetrics.

d. Gynæcology.

e. Pædology.

f. General Sanitary Science, Climatology, and Hygiene.

g. Surgery.

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h. Anatomy and Physiology.
i. Microscopy and Histology.
j. Psychological Medicine.
k. Ophthalmology, Otology, and Laryngology.
l. Organization, Registration, and Statistics.

SECTION 2. Each of these bureaus shall consist of at least seven members.

SECTION 3. Each bureau, in its annual report, shall present a *résumé* of discoveries and progress in their respective fields, together with papers upon their special subjects selected for inquiry and discussion.

SECTION 4. The following STANDING COMMITTEES shall be appointed, as hereinafter provided for:

a. Legislation.
b. Medical Literature.
c. Foreign Correspondence.
d. Medical Education.
e. An Intercollegiate Committee.

SECTION 5. Each of these committees shall consist of at least five members, except the Intercollegiate Committee.

SECTION 6. Immediately upon the closing of a bureau the President shall appoint a chairman for the ensuing year; and the chairman so appointed shall form his own bureau, handing to the President a list of its members, so that it may be announced before the close of the session.

SECTION 7. The chairman of each bureau, as soon as possible after appointment, shall call his associates together and organize his bureau by the appointment of a secretary; and, being duly organized, the bureau shall select a special subject upon which to labor, and report at the next meeting of the Institute.

SECTION 8. No bureau shall submit for discussion and publication any papers not relating to the special subject agreed upon at the beginning of the year, except such as may be included in the general *résumé*.

SECTION 9. No report or paper shall be received by the Institute in an incomplete or unfinished condition; and no paper shall be published in the *Transactions* which has been previously published, or which is not handed to the General Secretary within thirty days after the close of the session.

SECTION 10. Immediately upon the reception and disposition of the report of a standing committee, the President shall appoint the committee for the following year, except the Intercollegiate Committee, which shall be made up of two delegates from each college.

SECTION 11. No paper shall be read from any bureau or com-

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mittee requiring over fifteen minutes, without unanimous consent, but an abstract of the same may be presented.

SECTION 12. The *Transactions* of the Institute shall be issued by the General Secretary within three months after the close of the session, and copies shall be delivered to those entitled to them without individual expense.

SECTION 13. All reports by delegates from various societies and institutions shall be limited to five minutes each.

SECTION 14. In all discussions no speaker shall be allowed more than five minutes, nor to speak more than once upon the same subject, without a vote of consent, taken in the usual manner.

SECTION 15. Members neglecting the payment of dues for three years, after proper notification from the Treasurer, shall have their names dropped from the roll of membership.

SECTION 16. The annual meeting of this body shall consist of one general morning session daily for the transaction of the business of the Institute, and during the afternoon or evening of each day its several bureaus shall hold sectional meetings for the more complete performance of their duties.

SECTION 17. The Executive Committee shall constitute the Committee of Publication.

SECTION 18. The election of officers for the ensuing year, and the determination of the next place for the meeting of the Institute, shall take place at twelve o'clock on the last day of the session.

ARTICLE VIII.

SECTION 1. Members violating the provisions of the Code of Ethics adopted by the Institute, shall be expelled, or placed under censure, by a vote of two-thirds of the members present, upon satisfactory proof of such violation.

ARTICLE IX.—AMENDMENTS.

These By-Laws may be altered or amended by a vote of two-thirds of the members present at any annual meeting.

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LXXIV.

RESOLUTIONS.

ADOPTED JUNE 8, 1854.

Resolved, That the pharmaceutists of the homœopathic school be recommended to use, in the preparation of drugs by trituration, the proportions of ten grains of the drug to ninety grains of sugar of milk; and, for the sake of uniformity, to retain the numerical designation adopted by Hahnemann, and continued by the majority of homœopathic physicians.

ADOPTED JUNE 4, 1857.

Resolved, That it is the duty of the American Institute of Homœopathy to extend a fostering care to the homœopathic medical colleges of the United States, and exert its influence in directing students of medicine who are seeking admission to the honors of the profession to their halls for instruction.

Resolved, That the American Institute of Homœopathy does not necessarily indorse the doctrines contained in the reports of committees by accepting and publishing such reports with the Proceedings.

ADOPTED JUNE 7, 1867.

Resolved, That, in the organization of life insurance companies which discriminate in favor of practical homœopathists, we recognize an important instrumentality, which by showing the superiority of homœopathic treatment, will contribute to the more rapid adoption of the principles of medical science promulgated by the illustrious Hahnemann; and that, whenever practicable, the members of this Institute will give to such organization a united and cordial support.

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ADOPTED JUNE 9, 1869.

Resolved, That the Bureau of Clinical Medicine be requested to give attention to the collection of clinical verifications of the symptoms contained in our Materia Medica, and to include such verifications in their reports, with whatever details they deem proper, giving credit to the authors.

Resolved, That the Institute invite State societies to co-operate in this work of clinical verification of the Materia Medica.

ADOPTED JUNE 8, 1870.

Resolved, That each member of the American Institute will best subserve the interest of homœopathic medicine by using great care to avoid accepting any student of medicine into his office who does not or cannot give evidence of possessing the preliminary education recommended in the report of the Committee on Education.

Resolved, That the resolution relating to qualification apply to all students whose term of pupilage shall commence subsequent to the year 1870, and that every effort be made to acquaint the profession at large with the action of the Institute.

ADOPTED JUNE 9, 1874.

Resolved, That hereafter all provings by a single prover, presented through the Bureau of Materia Medica, Pharmacy, and Provings, be referred back to the bureau, to be retained by them until a sufficient number of provings are obtained to warrant the bureau in collating the same and presenting them to the Institute for publication; and such collation and presentation shall be a part of the duty of that bureau.

ADOPTED JUNE 12, 1874.

Resolved, That the bureaus of the Institute that pertain to practical medicine and surgery be hereafter arranged in rotation, so that each one may come first in its turn in successive years.

ADOPTED JUNE 15, 1875.

Resolved, That *Sectional Meetings* of any bureau may be held at the call of the chairman of that bureau, provided such meetings are not held during the sittings of the Institute.

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Whereas, It is now a difficult matter to obtain mortuary reports from many of our cities and towns, therefore

Resolved, That this body would recommend to the members of the Institute, that they, in their respective cities and towns, where published reports are to be had, obtain and furnish annually to the Bureau of General Sanitary Science, Climatology, and Hygiene a copy of such published reports; and, further, that when such reports are made up, State statistical mortuary reports be likewise sent to this bureau.

Resolved, That in states, cities, and towns where these reports are not made and published, they be urged to publish them for the general good of the country, as well as for local advantages.

ADOPTED JUNE 27, 1877.

Resolved, That all papers rejected by the Committee of Publication, and not published with the *Transactions* of the Institute, be referred back to their authors by the General Secretary, to be disposed of as they may see fit.

ADOPTED JUNE 29, 1877.

Resolved, First, That the Committee of Arrangements in preparing the Order of Business for future meetings of the Institute, be requested to set apart a certain time for hearing reports from delegates from institutions and societies who may be present at the meeting, such reports to be limited to five minutes each.

ADOPTED JUNE 26, 1879.

Resolved, That the General Secretary shall hereafter furnish to the homœopathic journals, editorial copies of the *Transactions* of this Institute.

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LXXV.

MEMBERS.

The ? denotes that the residence is doubtful; the figures show the date of membership. Members are requested to inform the General Secretary of any change in the address of any of the members.

The following is a part of the By-laws adopted June 20th, 1878:

ARTICLE VII, SECTION 16: Members neglecting the payment of dues for three years, after proper notification from the Treasurer, shall have their names dropped from the roll of membership.

SENIOR MEMBERS.

1853. ANGELL, HENRY C., M.D., 16 Beacon St., Boston, Mass.
1846. ANNIN, J. D., M.D., Newark, N. J.
1844. BALL, ALONZO S., M.D., 43 W. 11th St., New York.
1853. BARNES, GEORGE W., M.D., San Diego, Cal.
1846. BARROWS, IRA, M.D., Providence, R. I.
1846. BAYARD, EDWARD, M.D., 8 W. 40th St., New York.
1846. BELCHER, GEORGE E., M.D., 522 Madison Av., N. Y.
1851. BELL, WILLIAM C., M.D., Middletown, Conn.
1846. BERENS, BERNARD, M.D., 1507 Arch St., Philadelphia.
1846. BERENS, JOSEPH, M.D., S. W. cor. Broad and Green Sts., Philadelphia.
1854. BISHOP, D. F., M.D., Lockport, N. Y.
1853. BISSELL, ARTHUR F., M.D., 157 Maiden Lane, New York.
1845. BOARDMAN, J. C., M.D., Trenton, N. J.
1854. BURGHER, J. C., M.D., 332 Penn Av., Pittsburg, Pa.
1848. BURKE, A. C., M.D., 142 Union St., Brooklyn, N. Y.
1854. CATE, S. M., M.D., Salem, Mass.
1844. CATOR, H. HULL, M.D., Roxbury, N. Y.
1847. CHASE, HIRAM L., M.D., Cambridge, Mass.

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1846. Clark, Eliphalet, M.D., Portland, Me.
1844. Clark, Luther, M.D., 55 E. Newton St., Boston, Mass.
1850. Clark, J. K., M.D., 11 Kearney St., San Francisco, Cal.
1854. Clarke, Henry B., M.D., New Bedford, Mass.
1851. Collins, H. A., M.D., Springfield, Mass.
1854. Cooke, N. F., M.D., 58 State St, Chicago, Ill.
1848. Cook, Abijah P., M.D., Hudson, N. Y.
1854. Cox, James W., M.D., Albany, N. Y.
1848. Cummings. J. M., M.D., Portland, Me.
1852. Dake, Jabez P., M.D, 47 N. Vine St., Nashville, Tenn.
1844. Detwiler, H., M.D., Easton, Pa.
1847. Dodge, Moses, M.D., Portland, Me.
1848. Donovan, Thomas W., M.D., Tompkinsville, Staten Island, N. Y.
1846. Ehrman, Benjamin, M.D., 46 W. 7th St., Cincinnati, O.
1846. Ehrman, F., M.D., 84 W. 7th St., Cincinnati, O.
1850. Foote, George F., M.D., Stamford, Conn.
1844. Fuller, Milton, M.D., 35 Essex St., Boston, Mass.
1844. Gallupe, William, M.D., Bangor, Me.
1851. Gambell, W. P., M.D, 2 Rutland St., Boston, Mass.
1849. Gardiner, Daniel R., M.D., Norristown, Pa.
1844. Gray, John F., M.D., Fifth Avenue Hotel, New York.
1848. Guernsey, Egbert, M.D, 18 W. 23d St., New York.
1846. Guernsey, Henry N, M.D., 1423 Chestnut St., Phila.
1847. Guy, Samuel S., M.D., 179 Remsen St., Brooklyn, N. Y.
1846. Hallock, Lewis, M.D., 34 E. 39th St., New York.
1852. Hammond, Milton, M.D., 57 N. Paca St., Baltimore, Md.
1846. Helmuth, Wm. S., M D, 1904 Spruce St., Philadelphia.
1853. Helmuth, Wm. Tod, M.D., 299 Madison Av., New York.
1844. Hering, Constantine, M.D., 112 N. 12th St., Philada.
1854. Hoffman, H. H., M.D., 260 Penn Av., Pittsburg, Pa.
1846. Holt, Daniel, M.D., Lowell, Mass.
1854. Jones, Elijah U., M.D., Taunton, Mass.
1846. Jones, E. Darwin, M.D., Albany, N. Y.
1853. Joslin, Benjamin F., M.D., 50 W. 29th St., New York.
1848. Keep, Lester, M.D., corner Gates and Vanderbilt Avs., Brooklyn, N. Y.
1853. Kenyon, L. M., M.D., 86 W. Mohawk St., Buffalo, N. Y.
1844. Kimball, Daniel S., M.D., Sackett's Harbor, N. Y.
1848. Koch, A. W., M.D., 118 N. 12th St., Philadelphia.
1845. Lippe, Adolph, M.D, 1204 Walnut St., Philada.
1844. McManus, F. R., M.D., 71 Franklin St., Baltimore, Md.
1845. McVicar, J. A., M.D., 130 E. 17th St., New York.

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1848. Marcy, Erastus E., M.D., 307 5th Av., New York.
1851. Martin Joseph L., M.D., Baltimore, Md.
1844. Neidhard, Charles, M.D., 1511 Arch St., Philada.
1848. Norton, Lucian H., M.D., Bridgeport, Conn.
1844. Paine, Henry D., M.D., 26 W. 30th St., New York.
1850. Paine, Horace M., M.D., Albany, N. Y.
1848. Palmer, Miles W., M.D., 235 E. 18th St., New York
1853. Parks, John M., M.D., Hamilton, O.
1854. Pomeroy, Thos. F., M.D., 143 Fort St., Detroit, Mich.
1847. Poole, Augustus, M.D., 232 W. 1st St., Oswego, N. Y.
1844. Pulte, Joseph H, M.D., 293 Walnut St., Cincinnati, O.
1854. Randel, Wm. H., M.D., 1 Clinton Sq., Albany, N. Y.
1848. Raymond, Jonas C., M.D., 248 Genesee St., Utica, N.Y.
1848. Reading, J. R, M.D., Somerton, Pa.,
1846. Rhees. Morgan J., M.D., Wheeling, W. Va.
1847. Richardson, Edw. T., M.D., 141 Montague St., Brooklyn, N. Y.
1849. Rodman, William W., M.D., New Haven, Conn.
1844. Robinson, Horatio, M.D., Auburn, N. Y.
1848. Russell, George, M.D., 14 Lynde St., Boston, Mass.
1847. Sawyer, B. E., M D., Haverhill, Mass.
1844. Schmidt, J., M D., 92 Eutaw St., Baltimore, Md.
1847. Shackford, Rufus, M.D., Portland, Me.
1846. Shepard A., M.D., Glendale, O.
1854. Sisson, Edward R., M.D., New Bedford, Mass.
1853. Skiles, F. W., M.D., 160 Remsen St., Brooklyn, N. Y.
1846. Small, Alvin E., M.D., 583 Wabash Av., Chicago, Ill.
1848. Smith, D. S., M.D., 402 Michigan Av., Chicago, Ill.
1850. Springsteed, David, M.D., Albany, N. Y.
1846. Stevens, C. A., M.D., Scranton, Pa.
1852. Stevenson, T. C., M.D., Carlisle, Pa.
1848. Taft, Charles A., M.D., Hartford, Conn.
1853. Talbot, I. T., M.D., 66 Marlboro St., Boston, Mass.
1847. Thayer, David, M.D., 94 Boylston St., Boston, Mass.
1854. Walker, Charles H., M.D., Chelsea, Boston, Mass.
1844. Ward, Isaac M., M.D., Newark, N. J.
1844. Ward, Walter, M.D., Mount Holly, N. J.
1848. Warner, Lewis T., M.D., 39 E. 19th St., New York.
1854. Watson, William H., M.D., 270 Genesee St., Utica, N. Y.
1848. Wells, Lucien B., M.D., 225 Genesee St., Utica, N. Y.
1844. Wells, P. P., M.D., 84 Clinton St., Brooklyn, N. Y.
1847. Whittle, Joshua F., M.D., Nashua, N. H.
1854. Wood, J. B., M.D., West Chester, Pa.

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MEMBERS.

1870. Abell, D. T., M.D., Sedalia, Mo.
1872. Abercrombie, Wm. H., M.D., Jersey City, N. J.
1873. Adams, Julia A., M.D., Cottonwood Springs, Col.
1871. Adams, Myron H., M.D., Palmyra, N. Y.
1876. Adams, Reuben A., M.D., 31 N. Fitzhugh St., Rochester, N. Y.
1867. Albertson, J. A., M.D., 34 Eddy St., San Francisco, Cal.
1873. Allen, George D., M.D., Portland, Mich.
1872. Allen, Henry C., M.D., 34 Fort St., Detroit, Mich.
1871. Allen, Richard C., M.D., 4708 Paul St., Frankford, Philadelphia.
1866. Allen, Timothy F., M.D., 10 E. 36th Street, New York.
1875. Alling, C. P., M.D., Bradford, Pa.
1868. Alvord, Samuel, M.D., Chicopee Falls, Mass.
1879. Anderson, Jos. C., M.D., Mansfield, Ohio.
1876. Andrews, Purnell W., M.D., Camden, N. J.
1871. Andrews, William J., M.D., 13 E. Park St., Newark, N. J.
1869. Arcularius, Philip E, M.D., 57 E. 21st St., New York.
1869. Arthur, A. A., M.D., Vergennes, Vt.
1874. Arthur, Charles, M.D., Scranton, Pa.
1858. Ashton, A. H., M.D., 730 S. 10th St., Philadelphia.
1871. Aten, Henry F., M.D., 34 Hanson Place, Brooklyn, N. Y.
1871. Bacon, Charles A., M.D., 130 E. 35th St., New York.
1867. Baer, O. P., M.D., Richmond, Ind.
1874. Baethig, Henry, M.D., 171 13th St., Buffalo, N. Y.
1870. Bagley, H. B., M.D., Seattle, Wash. Ter.
1879. Bailey, E. Stillman, M.D., 2131 Wabash Av., Chicago.
1872. Baker, Mary G., M.D., Worcester, Mass.
1875. Baker, Milton H., M.D., Highland Park, Ill.
1870. Baker, R. F., M.D., Davenport, Iowa.
1871. Baldwin, Aaron, M.D., 1017 M Street, N. W., Washington, D. C.
1876. Baldwin, Harry D., M.D., Montrose, Pa.
1857. Baldwin, Jared G., M.D., 8 E. 41st St., New York.
1868. Bancroft, Walton, M.D., Keokuk, Iowa.
1866. Baner, William J., M.D., 13 E. 33d St., New York.
1876. Banks, James O. H., M.D., 313 N. 37th St., Philadelphia.
1867. Barker, William C., M.D., Waukegan, Ill.
1877. Barnes, Lewis, M.D., Delaware, O.

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1875. Barr, Frank H., M.D., Cleveland, O.
1877. Barrett, Albert R., M.D., Richmond, Va.
1868. Barrows, George S., M.D., Seneca, Kansas.
1857. Bartlett, A. R., M.D., Aurora, Ill.
1873. Bartlett, Henry H., M.D., Elgin, Ill.
1868. Baxter, H. H., M.D., Cleveland, O.
1867. Baylies, B. L. B., M.D., Astoria. N. Y.
1870. Beaumont, John H., M.D., Freeport, Ill.
1878. Becker, Fred. W., M.D., Aurora, Ind.
1865. Beckwith, D. H., M.D., Cleveland, O.
1871. Beckwith, E. C., M.D., Columbus, O.
1857. Beckwith, Seth R., M.D., 161 W. 7th St., Cincinnati, O.
1877. Beebe, Clarence E., M.D., 21 W. 37th St., N. Y.
1870. Beebe, E. W. M.D., Evansville, Wis.
1869. Beebe, A. G., M.D., 81 Park Av., Chicago, Ill.
1876. Beebe, Henry E., M.D., Sidney, O.
1876. Bennett, Robert A., M.D., Dover, N. J.
1868. Bell, James B., M.D., Augusta, Me.
1867. Bell, James S., M.D., Cedar Falls, Iowa.
1877. Bellows, Howard P., M.D., Auburndale, Mass.
1872. Bender, Prosper, M.D., Quebec, Dominion of Canada.
1875. Bennett, Asahel M., M.D., Rochester, N. Y.
1869. Bennett, Hollis K., M.D., Fitchburg, Mass.
1865. Benson, P. Oscar C., M.D., Skaneateles, N. Y.
1874. Bennit, William W., M.D., 1106 10th St., N. W., Washington, D. C.
1872. Berghaus, Alex., M.D., 231 W. 44th St., New York.
1870. Betts, B. Frank, M.D., 1700 Girard Av., Philadelphia.
1869. Bevin, William A., M.D., Trenton, N. J.
1868. Biggar, Hamilton F., M.D., Cleveland, O.
1876. Bigler, William H., M.D., 118 N. 12th Street, Philadelphia, Pa.
1871. Bingaman, C. F., M.D., 294 Penn Av., Pittsburg, Pa.
1869. Bishop, Herbert M., M.D., Norwich, Conn.
1870. Bishop, Llewellyn A., M.D., Fond du Lac, Wis.
1869. Bishop, R. S., M.D., Medina, N. Y.
1869. Bloss, J. P., M.D., Troy, N. Y.
1865. Boericke, F. E., M.D., 635 Arch St., Philadelphia, Pa.
1874. Bond, Mary E., M.D., 122 Lexington Av., New York.
1866. Borland, W. C., M.D., Pittsburg, Pa.
1875. Bosley, S. Clement, M.D., Connelsville, Pa.
1872. Bossert, Charles, M.D., 345 E. 120th St., New York.
1869. Bowen, G. W., M.D., Fort Wayne, Ind.
1871. Bowie, Alonzo P., M.D., Uniontown, Pa.
1869. Bowman, Benjamin, M.D., Chambersburg, Pa.

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1866. Boyce, C. William, M.D., Auburn, N. Y.
1870. Boyer, Francis W., M.D., Pottsville, Pa.
1874. Boynton, Frank H., M.D., 151 Lexington Av., New York.
1860. Bradford, F. Standish, M.D., 55 W. 34th St., New York.
1871. Bradford, Herbert C., M.D., Lewiston, Me.
1869. Bradford, Thomas L., M.D., 901 N. 8th St., Philadelphia.
1877. Branstrupp, William T., M.D., Vincennes, Ind.
1865. Bradford, T. C., M D., 315 Race St., Cincinnati, O.
1874. Bradner, Fred. H., M.D., Middletown, N. Y.
1869. Breyfogle, Charles W., M.D., San José, Cal.
1873. Breyfogle, W. L., M.D., Louisville, Ky.
1875. Breyfogle, Edwin S., M.D., San José, Cal.
1869. Brick, Francis, M.D., Worcester, Mass.
1869. Briry, Milton S., M.D., Bath, Me.
1876. Bronson, Benjamin F., M.D., Bridgeport, Conn.
1859. Brooks, Charles A., M.D., Clinton, Mass.
1872. Brooks, Charles G., M.D., East Boston, Mass.
1876. Brown, Asa W., M.D., Providence, R. I.
1867. Brown, Edward V., M.D., Tarrytown, N. Y.
1869. Brown, Granville Curtis, M.D., 28 East 22d Street, New York.
1867. Brown Henry R., M.D., Leominster, Mass.
1867. Brown, Titus L., M.D., 45 Collier St., Binghamton, N. Y.
1872. Brown, Samuel, M.D., 651 N. 10th St., Philadelphia.
1876. Bruns, Frederick, M.D., 96 Lexington St., East Boston, Mass.
1867. Bryant, Melville, M.D., 374 Adelphi Street, Brooklyn, N. Y.
1869. Buck, J. D., M.D., 305 Race Street, Cincinnati, O.
1868. Budlong, John C., M.D., Centredale, R. I.
1873. Buffum, J. H., M.D , 201 E. 23d St., N. Y.
1879. Bunting, Harry M., M.D., Philadelphia, Pa.
1867. Burdick, Stephen P., M.D., 351 W. 34th St., New York.
1869. Burr, Charles H., M.D., Portland, Me.
1875. Butler, Clarence W., M.D., Mont Clair, N. J.
1873. Butler, W. M., M.D., Middletown, N. Y.
1877. Butler, John, M.D., 102 E. 22d St., New York.
1868. Calvert, William J , M.D., Jackson, Mich.
1879. Campbell, Eliza L., M.D., Attleboro, Mass.
1867. Campbell, C. E., M.D., 314 E. 18th St., New York.

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1876. Campbell, James A., M.D., 1731 Morgan Street, St. Louis, Mo.
1874. Campbell, Merrett B., M.D., Joliet, Ill.
1873. Canfield, Corresta T., M.D., Titusville, Pa.
1874. Carmichael, James A., M.D., 11 W. 30th St., N. Y.
1869. Carpenter, Charles H., M.D., 1 Fifth St., Troy, N. Y.
1873. Caruthers, R. E., M.D., 107 Arch St., Allegheny, Pa.
1879. Cassaday, F. F., M.D., Steven's Point, Wis.
1876. Cate, William, M.D., Salem, Mass.
1859. Chamberlain, William B., M.D., Worcester, Mass.
1873. Chantler, I. B., M.D., Sewickley, Pa.
1875. Chapman, Millie J., M.D., 216 Penn Av., Pittsburg, Pa.
1871. Chase, Maurice J., M.D., Galesburg, Ill.
1873. Chase, Sara B., M.D., 209 W. 34th St., New York.
1876. Chase, Herbert A., M.D., Cambridge, Mass.
1870. Cheney, Benjamin H., M.D., 189 Church Street, New Haven, Conn.
1871. Child, Nelson N., M.D., Ogdensburg, N. Y.
1875. Childs, Orrin D., M.D., Akron, O.
1865. Childs, W. R., M.D., 306 Penn Av., Pittsburg, Pa.
1870. Chittenden, George W., M.D., Janesville, Wis.
1859. Clarke, John L., M.D., Fall River, Mass.
1869. Coburn, Edward S., M.D., 91 Fourth St, Troy, N. Y.
1869. Cochran, Charles A., M.D., Winthrop, Me.
1865. Cofreen, J. Q. A., M.D., Dayton, O.
1866. Cogswell, C. H., M.D., Clinton, Iowa.
1870. Colburn, S. H., M.D., Athol, Mass.
1874. Colton, Henry E., M.D., Buffalo, N. Y.
1869. Compton, J. Augustine, M.D., Indianapolis, Ind.
1874. Conant, Clarence M., M.D., Middletown, N. Y.
1876. Conant, Thomas, M.D., Gloucester, Mass.
1875. Connor, Delania T., M.D., New Haven, Conn.
1869. Cook, Charles P., M.D., Hudson, N. Y.
1867. Cook, E. G., M.D., 103 State Street, Chicago, Ill.
1874. Coon, Henry C., M.D., Alfred Centre, N. Y.
1866. Cooper, J. F., M.D, Allegheny, Pa.
1876. Cooper, Clark J., M.D., Camden, N. J.
1874. Corbin, John L., M.D., Athens, Pa.
1869. Corcoran, Luke, M.D., Springfield, Mass.
1873. Cossaart, A. B., M.D., 1421 Lexington Av., N. Y.
1877. Couch, Asa S., M.D., Fredonia, N. Y.
1876. Couch, Louis B., M.D, Nyack, N. Y.
1869. Covert, Nelson B., M.D., Geneva, N. Y.
1871. Covert, Rynear B., M.D., Seneca Falls, N. Y.
1865. Cowley, David, M.D., Station A., Pittsburg, Pa.

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1875. Cowperthwaite, Albert C., M.D., Iowa City, Iowa.
1869. Cragin, F. M., M.D., Norwood, Mass.
1878. Cranch, Edward, M.D., Erie, Pa.
1874. Crank, C. D., M.D., Cincinnati, O.
1872. Crater, Henry, M.D., Somerville, N. J.
1869. Crispell, G. D., M.D., Kingston, N. Y.
1876. Crocket, Frederick E., M.D., West Newton, Mass.
1876. Crosby, Obed H., M.D., Atlantic City, N. J.
1869. Cross, Hiram B., M.D., Jamaica Plain, Mass.
1875. Cross, Lester E., M.D., Stockton, Cal.
1869. Cross, William P., M.D., 476 Broadway, South Boston, Mass.
1859. Cullis, Charles, M.D., 16 Somerset St., Boston, Mass.
1867. Currier, C. B., M.D., N. Y. City.
1876. Curtis, John M., M.D., Wilmington, Del.
1874. Curtis, R. J., M.D., Mayville, N. Y.
1867. Cushing, Alvan M., M.D., Lynn, Mass.
1878. Cushing, Chas. F., M.D., Elyria, O.
1879. Custis, J. B. G., M.D., 604 E. Capitol St., Washington, D. C.
1869. Cutler, William C., M.D., Chelsea, Mass.
1866. Dake, B. F., M.D., Pittsburg, Pa.
1877. Dake, Walter M., M.D., Nashville, Tenn.
1872. Dake, William C., M.D., Nashville, Tenn.
1879. Dake, J. Percy, M.D., Nashville, Tenn.
1879. Danforth, L. L., M.D., 158 W. 44th St., N. Y. City.
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1874. Darling, Henry H., M.D., Keene, N. H.
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1871. Davis, W. Beesely, M.D., 323 Richmond Street, Philadelphia.
1875. Davis, Fielding L., M.D., Evansville, Ind.
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1868. Dayfoot, Herbert M., M.D., Mount Morris, N. Y.
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1874. Delamater, N. B., M.D., 65 22d St., Chicago, Ill.
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1869. Dennis, L., M.D., Newark, N. J.
1875. Deschere, Martin, M.D., 254 W. 25th St., New York.
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1874. Dunn, J. L., M D., Titusville, Pa.
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1866. James, J. E., M.D., N. W. corner 10th and Green Sts , Philadelphia.
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1867. Pratt, E. H., M.D., 73 Randolph St., Chicago, Ill.
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1871. Preston, Mahlon, M.D., Norristown, Pa.
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SECTION II.

REPORT

OF THE

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TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME II. NUMBER 4.

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X.

INTRODUCTORY REPORT OF THE BUREAU.

By J. P. Dake, M.D., Chairman, Nashville, Tenn.

During all the years in which this bureau has been charged with the duty of cultivating the fields of Materia Medica, Pharmacy and Provings, its attention has been given almost exclusively to Materia Medica and Provings.

As was once most aptly said, "the whole profession has seemed to make use of this bureau as a ready hopper into which to pour provings by the bushel."

The law *similia* accepted, the great aim has been to learn the positive or pathogenetic powers of numerous remedial agents. But in view of the uselessness of our therapeutic law and of our Materia Medica, where the means described in the one and pointed out as homœopathic by the other are so impure, or so undeveloped, or so imaginary, as to accomplish nothing of what is expected or desired of them, we have this year decided to devote the attention of the bureau entirely to a subject in pharmacy, namely, "*Drug Attenuation in Homœopathic Therapeutics.*"

In order to handle our subject systematically and thoroughly, we have divided it into five parts, as follows:

1. History of drug attenuation in homœopathic practice up to the death of Hahnemann, with a statement of its objects and methods.

2. History of drug attenuation in homœopathic practice since the time of Hahnemann, with a statement of its objects and methods, with especial reference to variations from those approved by Hahnemann.

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3. The means employed in drug attenuation; what they should be, and the dangers of impurity.

4. The limits of drug attenuation, or proofs of drug presence in attenuations above the 3d decimal, from the standpoint of the scientist.

5. The limits of drug attenuation, or proofs of the presence of medicinal power in attenuations above the 6th decimal, from the standpoint of the therapeutist.

Before proceeding with the papers upon these several parts it is proper for me to speak briefly of the leading purposes and methods in our treatment of the subject:

1. To properly understand the objects and applications of a measure or rule, in any department of science and art, it is necessary to learn its history, to consider the necessity and the circumstances leading to its adoption.

Recognizing Hahnemann as the father of drug attenuation, as he was of the Materia Medica, and of the therapeutic rule observed in homœopathic practice, we must examine his sayings and doings as illustrative of that measure in pharmacy.

Assuming his standpoint in the early morning of the homœopathic art, we witness the aggravations following his use of traditional doses in the sick. We see him diminishing his doses, dividing and subdividing the drug mass, in order to escape these aggravations. Step by step we follow him on to the point where he discovers the important fact that, the efficiency of the drug is not diminished in proportion to the diminution of its weight or bulk, its particles being very minutely divided, and so prepared for a more extended contact or a readier absorption.

We find him speaking of the development of latent or inoperative drug power by the process of trituration, or succussion, with neutral materials. And in his old age, prompted by enthusiastic admirers, we hear him speak of the mystic power, the "spirit of medicine," and of its marvellous increase by the gradual annihilation of drug matter.

The first paper to be presented will give you briefly the views of Hahnemann in reference to the attenuation and "potentization" of drugs.

2. Passing on, to a period not long anterior to the death of the

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master and extending down to the present day, we find some of his disciples in the spiritual philosophy excelling him altogether. Spurning the material doses, with which he had demonstrated the reality of homœopathy, they have passed beyond all his calculations, into the shadowy realms of the unknowable, in the effort to grasp and wield the pure spirit of medicines.

Disdaining his sentiment when, planting himself upon the 30th attenuation, he said: "It must stop somewhere; it cannot go on to infinity," they have overleaped his painstaking methods, and gone into all manner of "bottle-washings" and shorthand ways of "potentizing" drugs, not to the thirtieth degree only, but, as claimed, to the millionth!

The second paper presented will bring to notice the departures from the pharmacal teachings of Hahnemann, with the reasons therefor, so far as made known.

3. The right action and efficiency of doses employed in homœopathic practice require the utmost care in the selection of neutral materials and of mechanical appliances and measures in pharmacy.

If we would have a given quantity of the remedy, prescribed in each dose, have it in a certain state of comminution, and pure, it is necessary to observe every possible precaution in regard to methods and materials, employed by Hahnemann, or suggested by discoveries and improvements made since his time.

The dangers of impurity and of defective methods and means will be pointed out in the third paper presented.

4. From the time when Hahnemann began to attenuate drug matter, in the reduction of doses and development of latent drug power, down through all the history of homœopathy, in every country where it has appeared, the most determined and effective opposition to its acceptance has been directed against the small doses employed.

It is now an old and quite traditional objection to our system, that we believe in the philosophical absurdity, "The less the cause, the greater the effect." And the charge, equally old, has been everywhere repeated, that our doses are entirely destitute of medicinal energy, and totally inert. To meet such objections

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our methods of attenuating drugs, and the objects in view therein, have been set forth and defended time and again.

Efforts have been made by many of our writers to show the reasonableness as well as the utility of our pharmaceutical measures and of our small doses, and yet, comparatively, but a small portion of the medical profession and of the laity have been convinced of the soundness of our position and the superiority of our practical measures, even in countries where the progress of homœopathy has been the most rapid.

In view of the diversity of opinions held, and of proofs adduced, by authors and teachers in our school, regarding the attenuation of medicines, and especially in view of the extreme positions assumed by some who would "go on to infinity" with the work of attenuation, calling it "dynamization," it is proper for us, here, to inquire after that class of proofs the stability and value of which all may appreciate and none question.

We come to ask the scientist, what his means and methods reveal in regard to the attenuability of drug matter, or how far up our decimal scale he can trace the presence of our medicines. Chemical tests go beyond the sense of taste and of smell and of ordinary vision. The microscope and the spectroscope go yet farther, telling us of drug presence in the 6th, 8th, 9th, and some claim in the 12th, attenuation. Physiological tests and provings go farther still, while analogy tells of the ability of various imponderable miasms and unseen germs to influence the bodily conditions of man in ways very decided and to extremes very fatal. The evidences thus furnished are well understood by learned men and will, by them, be forced upon an incredulous medical profession.

The papers relating to the fourth division of our subject will furnish an exhibit of such data, from the standpoint of the scientist.

5. Passing on, we have also to inquire what proofs are furnished in the medical field, viewed from the standpoint of the *therapeutist*, that there is medicinal power in attenuations, in which the scientist can discern no medicinal matter

We must remember how much the sensitiveness of the human organism to the homœopathic remedy is increased by disease,

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and, consequently, how much more delicate the test afforded by clinical experience than any furnished by extraneous means.

But, in applying this more delicate clinical test, we must likewise remember the complications and difficulties which unavoidably attend it. It is not as though one chemical element were introduced to detect the presence of another, nor as if a simple object were brought under the microscope for us to determine its visibility, nor even, as if a drug were introduced into a healthy organism, that we might learn its pathogenetic character.

In the administration of a medicine to the sick we are placing an agent amid the complex and delicate machinery of an organism, already disturbed by other agencies, termed morbific causes, and continually subject to the many minor disturbing influences of personal environment.

In looking upon the symptoms, appearing in the drug prover, it is found exceedingly difficult, in fact impossible by one experiment, to determine which are really drug-effects and which the effects of inherent or circumstantial causes. Such being the case, where no special morbid factors are operating, how much greater the difficulty when we wish to determine how much, or if any, definite impression is made upon a diseased organism by a medicine administered. It will not do to assume that the disappearance of disease, or recovery of health, in every case subjected to our treatment, is due to the doses of medicine administered. Logic and common-sense, alike, cry out against such arrant presumption.

In view, then, of the uncertainties attending the testimony of clinical experience, we can but look with great doubt and disfavor upon the practice, too common with authors in our school, of gathering out of the journals and society transactions every reported cure, as the certain effect of a medicine administered. The idea of extending our Materia Medica by the addition of all the new symptoms appearing in the sick, as if they were the positive effects of the medicine given, is too absurd for a moment's serious consideration. And the case is not a whit better when all the symptoms disappearing from the sick are added, now as positive, or again, as curative symptoms of the drug employed.

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Planting ourselves upon this solid ground we cannot hesitate to declare Allen right in excluding, from his *Encyclopedia*, all symptoms reported, as appearing for the first and only time in the sick, after the administration of certain drugs; and Hering wrong in hoarding up, as reliable verifications, and as "guiding symptoms," all those symptoms by anybody reported, as disappearing from the sick, after the exhibition of homœopathic remedies.

When, now, we attempt to gather up proofs from the therapeutic field as to the presence of medicinal power in attenuations, which the scientist says show to him no medicinal matter, we must proceed with extreme caution. It will not do to take the reports of medical enthusiasts, who claim and publish a cure, an undoubted medicinal effect, in every case where the highest attenuation has been administered and the patient has recovered. Who has not learned that the *post hoc* is not always, nor generally, the *propter hoc* in medicine?

Reports may be taken, as of some worth, from practitioners thoroughly educated in the elements of medicine, acquainted with the natural history of diseases, so as to know what symptoms belong to them, and so familiar with the general range of medicines employed as to distinguish their effects from the ephemeral effects of surrounding influences.

Reports may be valuable, coming from wise and cautious and conscientious practitioners, realizing the difficulties of their undertakings, the chances for error, and the supreme importance of the truth, and nothing but the truth, in journals and books calculated to govern human effort in behalf of human life.

It is for us to scrutinize reports for internal evidences of value, and we may not be excused from carefully considering the character and qualifications of their authors.

It is well known that every theory in therapeutics, as well as every noted remedy and measure mentioned in history, has had abundant testimonials in its favor. Clinical experience has testified in behalf of the most arrant humbugs and impostors the world has ever seen.

Hence, when we pass beyond the checks and safeguards of scientific observation and analogy, when we come to prescribe

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doses for the sick, in which the scientist and even the mathematician says there is no medicine, we are compelled to be incredulous enough to look closely within and about our patient, to determine if, possibly, some other influence, beside that of the drug, may not be playing the chief part in the removal of disease or restoration of health.

The papers, relating to the fifth division of our subject, will submit what proofs we have of drug power in attenuations above the 6th decimal, as furnished from the field of therapeutics.

In conclusion, as to the grand purpose of the inquiries instituted by our bureau, I should say, that it has been to obtain all possible proofs of power and efficiency in our attenuated doses. While interrogating the scientist we have not failed diligently to inquire of the practitioner of medicine; nor have we failed to consider the invisible and imponderable forces of nature while seeking proofs from the experimental physiologist. If, in our work, any bias or leaning to one side or the other has led us astray it has been to the side of attenuated doses.

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XI.

DRUG ATTENUATION IN HOMŒOPATHIC THERAPEUTICS.

FIRST DIVISION.—HISTORY OF DRUG ATTENUATION IN HOMŒOPATHIC PRACTICE UP TO THE DEATH OF HAHNEMANN, WITH A STATEMENT OF ITS OBJECTS AND METHODS.

By J. P. Dake, M D.

From the year 1796, when homœopathy was born, to 1801, a period of five years, Hahnemann made use of the ordinary preparations of the apothecaries in the treatment of the sick. In no wise did he depart from the usual style of doses, except in having but a single drug in each and in their gradual diminution, under the teachings of experience.

In 1801, in his essay upon the "Cure and Prevention of Scarlet Fever," speaking of Belladonna, he said, "The very smallest dose should be administered." And in the same connection, answering the charge of inefficiency of the doses employed, he adds: "Moreover it is probable that the thorough admixture of the few drops with a sufficient quantity of the fluid, in which it should be taken, was generally neglected."

Here is the beginning of drug attenuation as followed in the homœopathic school.

The first idea, evidently, was a diminution of dose to avoid medicinal aggravation, and the second was, the development of drug power by the repeated division of drug particles.

The division of particles had two objects in view; first, to prepare the medicine for a more ready absorption and conveyance to the seat of disease; and secondly, to increase its surface for a more extended and effectual contact with nerve-tissue.

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The first formula, for the attenuation of drugs, mentioned by Hahnemann was to "mix intimately one drop of the tincture with five hundred drops of diluted alcohol; and then one drop of this mixture with five hundred other drops of diluted alcohol; shaking the whole well."

In this way he had Opium prepared for use in scarlet fever. Ipecac. he prepared by mixing one drop with one hundred drops of dilute alcohol, and Belladonna by using four hundred drops of the dilute alcohol for the first attenuation, three hundred for the second, and two hundred for the third. Chamomilla he prepared by putting one drop of the tincture with five hundred drops of water and five hundred of alcohol, for the first attenuation, and eight hundred drops of dilute alcohol for the second.

Such formulæ surprised the apothecaries, and led the famous Hufeland to ask, "What effect can the hundred-thousandth part of a grain of Belladonna have?" Hufeland's *Journal*, in which this question was propounded, contained the answer in clear and vigorous terms.

The difference between the medicinal activity of "a very hard, dry pill of Belladonna," when swallowed whole, and the same amount of that drug taken in "solution," and likewise the difference between the sensitiveness of the human organism to that agent when in a state of robust health, and when diseased, so as to call for it as the homœopathic remedy, Hahnemann pointed out most clearly.

In his reply to Hufeland he shadowed forth a theory, in regard to drug action, which afterwards became his famous doctrine of *dynamization*. He said: "Medicine does not act atomically, but only dynamically;" or, as afterwards explained, not according to its matter, but its spirit.

In his famous essay, "The Medicine of Experience," published in 1805, and afterward enlarged into the first edition of the *Organon*, he said: "This *dynamic* action of medicines, like vitality itself, by means of which it is reflected upon the organism, is almost purely spiritual in its nature."

But it must be noticed that, in all his references to attenuated doses, he speaks of them as still possessed of some fraction of the original drug matter.

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Down to the year 1825 there seems to have been no essential change in his objects or methods in the attenuation of drugs. He still wished to develop and control drug power.

When seventy years of age, in answer to the inquiry, "How can such small doses of such very attenuated medicine as homœopathy employs still possess great power?" he brought his *dynamization* theory into full view. From that time on we often find him writing of the *spiritualizing* effect of repeated and thorough triturations and succussions.

Adhering to the formula, one drop or one grain of the medicine to one hundred or to ninety-nine drops or grains of the menstruum, he went up, step by step, to the 30th attenuation, or, as he came to say, the 30th "potency."

Again, I must observe, however, that Hahnemann, down to the day of his death, held to the belief that, in every attenuated dose, some drug-matter was yet present. In the *Organon* this statement from his pen was ever standing: "A substance, divided into ever so many parts, must contain in its smallest conceivable parts still some of this substance, and the smallest conceivable part does not cease to be *some* of this substance."

I leave to other members of the bureau, who report on this and on the second division of our subject, to mention variations, not to say contradictions, in the teachings of Hahnemann, and to show how other persons, taking up the dynamization theory, carried it to the extreme of absurdity, throwing around homœopathy those vast clouds of mysticism which have overshadowed its grand truths and cast suspicion upon its great works, as viewed by the greater part of the medical world.

In closing this brief paper I must explain that I have dwelt much upon the views and practices of Hahnemann not because I consider them in anywise authoritative or binding upon us, but simply as a matter of history, and a means of illustrating what is meant by drug attenuation and potentization.

I do not hesitate to declare that I have much greater confidence in the convictions avowed by Hahnemann when in the full vigor of ripened manhood, than when, in the gathering frailties of old age, the bitter opposition of enemies and the flattery of friends alike took him to extremes.

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XII.

HISTORY OF DRUG ATTENUATIONS AFTER THE TIME OF HAHNEMANN.

By W. L. Breyfogle, M.D., Louisville, Ky.

Having been assigned the second part of the special subject of this bureau, viz.: "The History of Drug Attenuation in Homœopathic Practice since the Time of Hahnemann, with a Statement of its Objects and Methods, with Especial Reference to Variations from those Approved by Hahnemann," I find myself confronted by many difficulties, and if, in my feeble attempts to describe the different methods of attenuating or potentizing medicines, I fail to give credit to the proper sources, or should seem to do any one injustice, I beg you will take into consideration the following facts:

First. That there are no publications which give the history of the different methods stated; on the contrary, some few of the many who have placed their preparations before the profession, have kept secret the particular methods followed, thus compelling the profession to trust them on the merits of their labels alone.

Second. That no distinction seems to have been made between the numbers, as used by Hahnemann in defining his attenuations, and as employed for those made by methods essentially different from his.

According to Hahnemann one grain of the medicine thoroughly triturated with one hundred grains of the vehicle was labelled the "hundredth;" one grain of this triturated with one hundred grains of the vehicle was labelled the "ten thousandth;" one

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grain of this preparation, triturated with one hundred more of the vehicle was labelled the "millionth." This latter preparation was then the "3d centesimal trituration." The number "one millionth" being used to determine the fractional quantity of medicine it contained.

From this 3d trituration all of Hahnemann's dilutions were made, and he frequently referred to it as the "mother of dilutions." When a dilution was required, one grain of this 3d trituration, or mother, was mixed first with fifty drops of water; and when dissolved fifty drops of alcohol were added, and it was labelled the "one one-hundredth," one drop of this added to one hundred drops of alcohol, was labelled the "one ten-thousandth," and so on.

When, therefore, we contrast this method of numbering with that afterwards adopted, viz., of indicating each separate dilution by figures, as one, two, three, etc., up to the millionth, the latter preparation representing not division of particles, but a million consecutive dilutions, you will readily understand how difficult it is to distinguish between and to describe the different methods of attenuation. And you will perhaps discover also, that, what Hahnemann chose to dignify by the title of "high potencies," differed greatly from those of the modern "homœopathician."

For many years, by the advice of Hahnemann, attenuations were not extended above the thirtieth; and in order to establish some uniformity in preparation, these thirtieths were all made as described above.

Experiments were then made, which will be described in another section of this bureau, by Korsakoff, Jenichen, and others, who were the *real* inventors of "high potencies."

Jenichen kept secret his method of preparing them, but from bits of information gathered from his letters, he depended upon continuous succussion without dilution, and reckoned the number of "potencies" by the number of shakes he gave the bottle, ten shakes being equivalent to one degree of "potency." Jenichen was a horse trainer by profession, and shot himself, we learn, after making the sixty-thousandth potency!

The decimal scale, I am informed by Dr. F. E. Boericke, was

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first mentioned in an article by Dr. Hering, printed in *Archiv XIV*, 2, page 134, where he alludes to experiments made, which showed that remedies acted differently when attenuated one to ten, one to one hundred, and one to one thousand. That the action of those attenuated with a larger quantity of vehicle seemed to be more superficial. On the appearance of this article medicines were prepared by many according to the decimal scale, and the practice spread so rapidly that Gruner, in his *Pharmacopœia*, adopted the decimal scale as a basis.

In the history of drug attenuation, since the time of Hahnemann, we have records of those made by Fincke, Dunham, Lehrman, Boericke and Tafel, and Swan.

Fincke has never published anything descriptive of his process of making "high potencies," preferring to keep all such information to himself. Sufficient is known, however, from the Patent Office to justify the assertion, that they are made by the fluxion process, and with water.

Dunham and Lehrman both prepared their high attenuations according to Hahnemann's plan, and with water. The same is true of Boericke and Tafel's preparations, except that they use alcohol.

Swan prepares his also with water and by the fluxion process. A machine is used ("Dr. Skinner's Centesimal Fluxion Potentizer," a description of which is given in the new medical journal called the *Organon*, No. 1, vol. 1, page 45), capable of filling and emptying a vial fifty times per minute, seventy-two thousand times per day, a million times in fourteen days and a half, running night and day. The glass is impregnated with one drop of the 1st centesimal dilution, then emptied and placed in position, the hand on the dial plate placed at O, and for every time the vial is emptied and filled the dial registers one "new potency." The operator is directed to turn the driving-wheel (ordinarily run by water) by hand until the first ten "potencies" are made, "as it is much safer"—(just why it is safer the doctor does not state). After this is accomplished, full power is turned on, and the vial is filled and emptied fifty times per minute, making a dilution one degree higher at every revolution. At the end of two weeks the hand on the dial reaches the number

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one million; then the hand must be brought back to the beginning, and in due time it produces the two, three, or four millionth, as required. I notice one case reported cured by the fifteen millionth!

This machine certainly deserves great credit as a labor-saver, for, according to the plans adopted by Hahnemann, Dunham, Lehrman, and Boericke & Tafel, it would require the constant labor, night and day, Sundays included, of one man for twenty-eight years to carry a single remedy up to the fifteen millionth dilution. It would cost over $100,000 for alcohol, and $33,000 for labor, at 15 cents per hour.

The object sought to be obtained by the attenuation of drugs was, according to Hahnemann, "to prevent serious aggravations from too strong a dose of medicine, prescribed strictly in accordance with the homœopathic law" (see § 275, *Organon*).

In § 279 he says, "The dose of a homœopathically selected remedy cannot be reduced so far, as to be inferior in strength to the natural disease, and to lose its power of extinguishing and curing at least a portion of the same, provided that this dose, immediately after having been taken, is capable of causing a slight intensification of the symptoms of the similar natural disease." In the preceding paragraph, however, he admits that "to determine the dose of each particular medicine for this purpose, and how to render this dose so small as to accomplish its purpose, gently and rapidly at the same time, is a problem which obviously, is neither to be solved by theoretical conjecture, nor by sophistic reasoning."

It would seem, from these extracts, that the object of attenuating was to prevent too great medicinal aggravations, but, that to know precisely which attenuation was to accomplish this, in each given case, was a problem "obviously beyond all solution." This question Hahnemann himself never solved; his favorite potency, in his old age, being the 30th, although he often went lower and sometimes higher, as his cases seemed to demand. Having some curiosity to learn whether Hahnemann changed his views on this subject, during the latter part of his life, I addressed a few questions to Madame Hahnemann, and from her letter, received a short time before her death, and which now lies

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before me, I quote the following: "You ask if Dr. Hahnemann changed his opinions in the last phases of his life on the potencies? and if he always administered high dynamizations?" "He used all the dynamizations, high and low, as the case of his patients required. I have even seen him give the 3d trituration, 'mother,' where he found it necessary, as he also administered the 200 milliems or thousandths when it was necessary."

It is urged by some, that by triturating and succussing remedies their strength is increased. Repeated efforts to dilute medicines have caused some enthusiastic supporters to attribute to their effects a real spiritualization of the drug property—a true, astonishing, unveiling, and vivifying of the medicinal spirit. A medicinal power, it is claimed, is liberated from its material bonds, so as to enable it to operate more penetratingly and more freely; and yet, the material receptacle of these spiritual forces, the palpable ponderable tissues are not to be taken into consideration!

This theory, however, involves a contradiction. Hahnemann says, for instance, "that the weakest possible dose is sufficient to overcome the disease," and that the dose can scarcely be made weak enough to avoid aggravations. On the other hand we are told that the process of attenuating drugs, instead of diminishing, really increases their medicinal action. Exactly which "horn of this dilemma" we will take has not yet been concluded.

As we have seen, in the manner of preparing attenuations, a wide difference of opinion exists; and it seems difficult to state precisely what constitutes a potency. Hahnemann tells us that one grain of the 3d centesimal trituration in ninety-nine drops of the vehicle is the "one one-hundredth," one drop of this in ninety-nine of alcohol is the "one ten-thousandth," and so on. Jenichen tells us that the 1st centesimal dilution becomes a new "potency" after every ten vigorous shakes, that three hundred shakes make the 30th "potency," and six hundred thousand shakes make the "60,000th potency." Drs. Dunham and Lehrman claim that each attenuation should be made separately, and prefer water as a menstruum.

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Boericke & Tafel also make each separately, but prefer alcohol as the vehicle.

Dr. Fincke, sharper than the rest, keeps his process to himself, expecting us to keep our eyes on the label, and to trust in God for the results.

Dr. Swan places a vial which had previously contained a drop of medicine, but which is now emptied, into position, turns loose a hydrant upon it, and at the end of fourteen and one half days he presents us the "1,000,000th potency;" or, if allowed to run steadily night and day, Sundays included, in precisely seven months and fourteen and one-half days he produces that monument to his genius, the "15,000,000th potency," through the use of which the *Medical Investigator*, in a recent number, reports a brilliant cure.

The question of potency has not been, nor does it seem likely to be settled by current methods. Even Hahnemann's views underwent frequent changes in regard to attenuating drugs. He first advised that each dilution be shaken for a moment or two only; afterwards warns us against too much shaking, as calculated to increase the power to a dangerous extent, and that only two shakes should be given each dilution. He afterwards loses his dread of shaking and appoints ten shakes for each dilution, as a standard; and again he allowed twenty, fifty, or more shakes, and half a dozen before each dose. In one place he says that the shaking is the only agent in the dynamization, and that a strong medicinal solution, if shaken long enough, will become like the 30th potency; in another he alleges that dilution is essential to the dynamizing of succussion, and that all the rubbing or shaking in the world will not dynamize an undiluted substance.

Notwithstanding this declaration we find Jenichen giving as many as six hundred thousand shakes to a single bottleful which he sent abroad as the "60,000th potency," and which, with many others made by him, now form part of our armament. Jenichen tells us he worked five hours a day at his preparations. Supposing each stroke occupied a second of time, and he worked continuously during all these five hours without stopping for an instant, to carry up one single remedy to the sixty thousandth

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would take him nearly five weeks of hard labor. We are not astonished when we hear him denounced as a "disreputable catchpenny, puffed into unmerited notoriety by a few credulous homœopathists, who should have known better than to lend their reputations to the propagation of what five minutes' calm calculation might have convinced them was an impossibility and a cheat."

There also exists a decided difference of opinion, due to the misapprehension of the word "Hahnemannism," which name, furnished by Dr. Hering for the new and unheard of natural force developed in attenuating drugs (just as the terms Mesmerism and Galvanism were used after Mesmer and Galvani), was intended to apply to any and all attenuations, the third as well the thirtieth. As the science of homœopathy progressed, however, it was made to do another duty, and is now applied only to the higher attenuations.

The word "Hahnemannian," also, was first used to designate all those physicians who adhered closely to Hahnemann's teachings. No matter what the attenuation prescribed, so long as they practiced according to the law of the similars, they were entitled to protection under that banner. Modern usage, however, has made it a notorious prostitute. It now represents a refuge for the vendors of secret nostrums,—for the theorist, who openly proclaims the fact that he does not follow Hahnemann's instructions,—as a cover for the surreptitious introduction into homœopathy of all sorts of "isms;" as an "ark of safety" for the ignorant pathologist, who is ashamed to be detected with any other book in his hand than a *Symptomen Codex!*

It is the barrier behind which the puny adversary gathers his little mud balls, ready to soil and blacken the character, perhaps, of him whose devotion to the law of similars has prepared the very soil upon which he has pitched his tent. Gentlemen, Hahnemann himself was not a "Hahnemannian" in this modern acceptation of the term.

Another evil which the introduction of "high potencies" has developed has been the speculative tendency. The development of this evil, like the rapid rising of a mighty river, will, unless relief soon appears, surely overwhelm and destroy us.

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Think of it! A stream of hydrant water is allowed to run into an empty vial for seven and one-half months, night and day, Sundays included, without interruption, and we are presented (for a sufficient consideration) with the "15,000,000th potency," with which we are assured Dr. Bolus, of Bungtown, cured a remarkable case that had resisted the treatment of six or seven hundred allopaths!!

But the climax of unblushing effrontery is reached when the announcement is made "that as the pathogenesis of these extremely high potencies differs greatly from those of the crude drug, new provings should be made!"

It is time to stop and consider. We must, if possible, retrace some of our steps, and we must learn to call things by their right names. We must not in future be dazzled by the brilliant rays of "Skinnerism," nor by the seductive flattery of "Swanopathy." We must rally again around the old flag of homœopathy, and although she is somewhat soiled and battle worn, we will bear her aloft in our efforts for new victories and fresh laurels.

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XIII.

THE MEANS EMPLOYED IN DRUG ATTENUATION;

WHAT THEY SHOULD BE, AND THE DANGERS OF IMPURITY.

By Lewis Sherman, M.D., Milwaukee, Wis.

Hahnemann's method of drug attenuation has, with commendable strictness and honesty, been adopted by the pharmaceutists of the homœopathic school.

Modifications of this method have in no wise affected the original design. They are: 1st. The use of the *decimal scale* in the place of the centesimal in the preparation of the lower attenuations. This insures a more through subdivision of the particles in the process of trituration, and accommodates those who prefer to administer the lower attenuations, by making preparations intermediate in strength between the crude and the $\frac{1}{100}$th, one between the $\frac{1}{100}$th and the $\frac{1}{10000}$th degree of attenuation.

2d. The use of *precipitated metals* in place of the coarser preparations used by Hahnemann. This insures greater purity and more complete subdivision.

3d. The use of *yellow glasses* to contain and preserve the medicines. It is a fact well known to scientists and easily proven to one not versed in optics, that the rays of light tend to decompose and otherwise chemically change nearly all medicinal substances. It has been found by experiment that this power to effect chemical changes resides almost wholly in the short rays, viz., the green, blue, indigo, and violet, the red, orange, and yellow having scarcely any of this power. It has been found, further, that the

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illuminating power of light is strongest in the yellow ray. Hence the advantage of glass which transmits only yellow light; for it gives the *maximum* of illumination offered by any single ray and almost a *minimum* of chemical action.

This fact may be illustrated by a simple experiment, which any physician can perform in his office.

Take vials of white, yellow, blue, and blackened glass; put into each the same number of pure sugar globules; moisten the globules in each with an equal quantity of an alcoholic solution of Nitrate of silver of the strength of $\frac{1}{100}$th; set all the vials in the window and observe the change in the color of the globules. The proportion of chemical action will be found to range nearly as follows: White 100, blue 95, yellow 5, blackened 5.

4th. The selection of the *appropriate solvent* in the preparation of tinctures and dilutions. The importance of this precaution has been almost ignored by pharmaceutists and physicians. The British Homœopathic Pharmacopœia, 1876, however, recognizes the fact that drugs of different nature require different solvents to extract their medicinal properties, and gives some specific directions. It is certainly absurd to prepare an aqueous solution of a resinous plant or an alcoholic solution of a substance insoluble in alcohol, or to make the lower dilutions without reference to solubilities. If we want reliable solutions of drugs we must find good solvents.

Other modifications of Hahnemann's formulæ have been made by persons having more or less influence, which have not received the sanction of the main body of the intelligent disciples.

The most important is that attributed to Count Korsakoff. It may aptly be termed—

THE BOTTLE-WASHING METHOD.

All of the dilutions of one remedy are made in *one* bottle by putting in 1 drop of tincture, and adding about 100 drops of alcohol and shaking, then turning the bottle upside down and throwing away all which does not adhere to the inside; then adding another 100 drops of alcohol, shaking and pouring out, etc. This might seem an innocent method of saving time and

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expense and getting *almost* as good a preparation as could be made by Hahnemann's process. Compared with the master's plan it is slovenly and inaccurate. As a matter of fact it was the forerunner of a series of departures which have done much to disgrace homœopathy.

The substitution of *wedgewood* for *porcelain* mortars and pestles is not in accordance with the letter or spirit of Hahnemann's method. Let any one take a new wedgewood mortar and briskly rub the inside with the pestle for a few minutes. The cloud of dust and stench which arises to his nostrils cannot fail to convince him that the 3d centesimal trituration of *Calcarea carbonica*, made in such a mortar, will be as likely to represent the medicinal properties of *Silicea*, or *Hepar sulphuris calcareum*, as those of the remedy he desires to attenuate.

We come now to consider some of the departures from the strict rules of homœopathic pharmacy in the matter of making attenuations.

CONTAGION POTENCIES.

The first great departure was made by an amateur in medicine, a Sarmatian count,—Korsakoff by name. "He placed in a bottle 1000 sugar globules, unmedicated, and added to them 1 globule medicated with the 100th of Sulphur, and shook the whole for a minute, when, of course, he found that any of these globules, thus infected by the medicated one, acted just as well as if it had been medicated with the tincture at first hand. His next feat was to medicate in the same manner 13,500 plain sugar globules, by shaking them for five minutes with 1 globule of Sulphur 30th.

Dr. Gross took up the idea and soon notified the medical profession that he had communicated blood-power to ever so many globules, by adding to them 1 globule moistened with a dilution of his own blood. With this spiritualized blood-power, he cured congestion. Dr. Plaubel, of Gotha, said that it did not matter if the globules fell out of the powder of milk sugar in which they were administered, for that sugar was already infected with the medicinal virtues of the globules with which it had been in contact.

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SUCCUSSION POTENCIES.

This, the second great departure, was also introduced by a layman in medicine, a very muscular horse-trainer, employed in the stable of the Duke of Gotha.

This innovation was purely a financial scheme. The inventor therefore kept his method a secret as far as possible, and working on the credulity of such men as Drs. Gross and Hering, gained a wide reputation, and accumulated a fortune by the sale of his potencies. From so much of his process as has leaked out it appears that the essential feature of his plan was to abridge and cheapen Hahnemann's process by using only one bottle for all the potencies and omitting to empty it, depending on the succussion to effect the potentizing. Every *ten* shakes was counted a potency. In pursuance of the request of Dr. Hering he went up in this way from 30 to 100, to 200, 500, 800, 1000, 1500, 2000, 10,000, 50,000, and finally to 60,000. This last potency was the result of 600,000 shakes of his own "powerful arm."

FLUXION POTENCIES.

The next departure of note was made by Dr. B. Fincke, a high potency homœopathic physician of Brooklyn, New York. This also was intended as a money-making scheme. The inventor patented his process, thinking this safer than to attempt to keep it a secret. Like the succussion plan of Jenichen, the fluxion idea was the daughter of laziness and greed, and found its ally in ignorance and superstition. This process dispenses with the *bottles*, the *alcohol*, and the *shaking*, and employs instead a small tumbler and a quantity of ordinary hydrant water. A measured quantity of water, containing, besides many impurities, appreciable quantities of *Calcarea carbonica*, *Calcarea sulphurica*, *Natrum muriaticum*, and other familiar medicinal substances is allowed to flow from a tank from a height into a tumbler containing a hundred drops of the 1st dilution of the medicinal substance. The tumbler is filled and allowed to overflow, while the measured quantity of water runs in. As the process continues the medicine is supposed to get at the same time scarcer

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and stronger. For every drachm of water which runs in there is tallied one degree of rise in potency. If a thousand drachms have run in the liquid is called the "1000th potency." If ten thousand drachms, the 10,000th potency. A little calculation will easily show that these attenuations are not centesimal, and that they do not correspond in any way with Hahnemann's preparations. Further, it is evident that no two potencies of the same number will be *alike*, for the proportion of medicine and water in the overflowing liquid varies with the force of the stream and other conditions which it is impossible to estimate. Consequently they do not represent any definite and determinable medicinal strength. The *thirtieth* potency of Fincke, made in a one and a half drachm tumbler, should, theoretically, be equivalent in drug strength to the *sixth* of Hahnemann, but, practically, it would vary between the *second* and the *tenth*. Pharmaceutically speaking, these preparations can only be characterized as *cheap* and *nasty*.

According to Dr. Samuel Swan, a notorious advocate of the fluxion potencies, if a drop of the 1st dilution be treated with 1,000,000 drops of water, it will be raised in potency 1000 times on the centesimal scale. Perhaps he meant 100,000 drops of water. In either case the statement is very far from the truth. The same Swan says that 333⅓ cubic inches of water is all he uses to make the 1000th potency, and that 333⅓ cubic inches of water contain 1,000,000 minims. A simple calculation shows that this quantity would contain only 88,658 minims; hence we infer this man to be a base pretender, for if he could not make the computation himself he ought to have hired a boy to do it for ten cents.

Dr. Boericke, of Philadelphia, has constructed a potentizer in which fluxion and succussion are combined. The impure Schuylkill water, which does the diluting, runs through a rubber tube into the potentizing glass.

Dr. Skinner, of Liverpool, England, has invented a potentizer in which the water passes through brass tubes into the potentizing glass. This glass is emptied at each rise in potency. But the most interesting feature of this system is that the *same glass* is used for the preparation of the potencies of all the different

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remedies in succession. Dr. Skinner states that he first puts into his potentizing glass one minim of the substance he intends to potentize, and then adds about 100 minims of water and shakes the mixture about a minute. "My object in doing so," he says, "is to impregnate the interior of the glass thoroughly with the medicinal substance." He adds: "There is good reason to believe that once the glass becomes thoroughly penetrated with the medicine, and suppose the process of attenuation to go on forever, not only would it be impossible to wash out the medicinal properties from the glass by means of cold water, but its therapeutic power would be greatly heightened. If it were possible for Niagara to pour its unceasing torrent of mighty waters for twenty thousand years through the glass once thoroughly impregnated with the medicine, every drop in it, and each drop which has passed through it, would still correspond with the original pathogenesis of the drug, and probably much more."

Dr. Skinner says he removes one kind of medicine from the glass before potentizing another by warming his little potentizer as he holds it in his hand over a small spirit flame. It would be very wrong, of course, to ask such an impious question as, "How is it possible to vaporize metallic platinum by holding it in a vessel which would melt at much lower temperature than the platinum?"

Dr. Burdick and Dr. Deschere, of New York, have each invented a potentizer which empties at each rise in potency. Dr. Lilienthal (*North American Journal of Homœopathy*) proposes to make the thirtieth and two hundredth with a vial, a pitcher of water, a hired man, and a spittoon or slop-jar!

This brief account of the departure from pure Hahnemannian homœopathic pharmacy would not be complete without mention of Dr. Hering's statement that one globule of the 30th potency makes, with the cubic inch of air in the bottle where it lies, a new potency! "The whole air of a room," he says, "must also be penetrated by the power of the globule and become a potency, if the right proportion existed between them; but as the proportion of the air is in excess it does not become a potency!"

Of all the innovations and pretended improvements in Hahne-

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mann's method of attenuation, none of the foregoing merit approval, for the reason that they fail in purity or accuracy or both.

On the ground of expense there seems to be little demand for the invention of labor-saving machines. When a supply sufficient to last a hundred years, of any remedy, attenuated by hand to the *thirtieth* or *two hundredth*, can be purchased of a reliable pharmacy for a few cents, there is no need of elaborate and costly machines to make inferior preparations.

While the deluded followers of Fincke and Swan were using their so-called 40,000ths, 100,000ths, and 1,000,000ths under the representation that they were more attenuated than the Hahnemannian preparations, they thought they performed wonderful cures, which could not be wrought with the regular attenuations. Their cry was, "Higher! higher!" When now the rottenness of these pretensions is disclosed, and it is shown that the fluxion potencies bear no comparison in tenuity with the centesimal, that they are uncertain in strength and rank with impurity, the hot-headed, hare-brained dupes are too idiotic to see their error and still cry, "Higher! higher! every year higher!"

In concluding this necessarily discursive paper, I must do honor to the genius of Samuel Hahnemann by recommending a free and intelligent adherence to the principles and methods which he introduced, and by advising the cautious acceptance of such modifications as the advance of sound science demands.

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XIV.

THE LIMITS OF DRUG ATTENUATION;

OR, PROOFS OF DRUG PRESENCE IN ATTENUATIONS ABOVE THE THIRD DECIMAL, FROM THE STANDPOINT OF THE SCIENTIST.

By S. A. Jones, M.D., Michigan.

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1. CHEMICAL DIVISIBILITY.

The starting-point of the research upon which I have the honor to report is found in Faraday's *Bakerian Lecture for* 1856—"Experimental Relations of Gold (and other Metals) to Light."*

Faraday dissolved gold in aqua regia, and reduced it therefrom with a solution of Phosphorus in Sulphide of carbon, obtaining thereby "ruby and amethystine fluids." He says, these fluids, "when in their finest state, often remain unchanged for many months, and have all the appearance of solutions. But they are never such, containing in fact no dissolved, but only diffused gold. The particles are easily rendered evident, by gathering the rays of the sun (or a lamp) into a cone by a lens, and sending the part of the cone near the focus into the fluid; the cone becomes visible, and though the illuminated particles cannot be distinguished because of their minuteness, yet the light they reflect is golden in character, and seem to be abundant in proportion to the quantity of solid gold present. Portions of fluid so dilute as to show no trace of gold, by color or appearance, can have the presence of the diffused solid particles rendered evident by the sun in this way."

* Philosophical Transactions, p. 145, 1857.

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The minutest divisibility of gold recorded by Faraday, in his researches, is "one volume of gold in about 750,600 volumes of water."

The highest magnifying power used by Faraday, in the microscopical examination of these fluids, is 700 diameters.

The writer made similar "ruby and amethystine fluids" by reducing the dissolved amic chloride with an ethereal solution of Phosphorus, and could find no appearance of "grained structure," when examining these fluids with a power of 2700 diameters. If, however, one drop of such a solution be evaporated on a glass "slide," particles of gold are readily discernible with a power of 125 diameters.

Beyond all cavil Faraday's "ruby and amethystine fluids" contain gold in division, not in solution, and in particles so minute as to defy the utmost power of the microscope.

2. THE COLOR TEST.

Having found by evaporating one drop of the amethystine fluid, that the color is due to the presence of gold, it follows that the existence of color enables the naked eye to discern the presence of gold in such a solution, however attenuated, as still retains color.

Faraday's limit was $\frac{1}{750800}$th part of gold—that is, the equivalent of our 5.756 decimal attenuation.

To determine the limit of the naked eye color-test, with such apparatus as was at hand, namely, a 15-inch long litre jar, the following experiment was made:

Took 100 milligrammes of gold (precipitated by $FeSO_4$), dissolved in nitro-hydrochloric acid, and evaporated to dryness on a sand-bath. Dissolved the resulting amic chloride in 100 cc. of distilled water: having then the "3d decimal attenuation" of *gold* in the form of a chloride (3^x).*

* This experiment is only approximately accurate. In all the nitro-hydrochloric solutions of gold which I have evaporated on a sand-bath, to drive off the excess of chlorine, I find a trace of reduced gold. There is, then, *less* gold than is represented by the figures given in the attenuations made therefrom. As the subject of the *mechanical divisibility* (a far more arduous research) required more time than could well be taken from more pressing duties, this trifling error remains unadjusted.—S. A. J.

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Took 1 cc. of said "3d decimal attenuation," added 99 cc. of distilled water and a few drops on an ethereal solution of Phosphorus (5ˣ). Result: a fluid of an amethystine color.

Put the above 100 cc. of amethystine fluid in a 1000 cc. graduated jar, and added 900 cc. of distilled water (6ˣ). Result: a faint amethystine hue still evident.

Took of this 6ˣ attenuation 100 cc., put it into a fresh jar and added 400 cc. of distilled water (6.5ˣ). Result: on looking through the fluid, in the long axis of the jar, and with white paper underneath, the eye still sees that it is not absolutely colorless.

This is deemed the limit of the naked eye color-test, with a 15-*inch column of fluid:* 1 *part of gold in* 5,000,000 *of water.*

To the above 500 cc. of 6.5ˣ attenuation added 100 cc. of distilled water, so that the measuring jar contained 100 cc. of gold solution (?) and 500 cc. of distilled water. Then added 400 cc. of 6ˣ gold solution (?) (6.1ˣ). Result: color plainly evident—a faint amethystine tinge.

This jar now contained gold 1 part, water 2,000,000 parts. Added a few drops of stannous Chloride ($SnCl_2$) and set aside.

In twenty-four hours this jar contained a sediment of a royal purple color—a cloudy or flocculent, not a solid precipitate. From this precipitate, and by evaporation, was obtained the gold which is mounted on slide "A," accompanying this paper.

In the vial marked "B," accompanying this paper, is some of the amethystine fluid containing gold in suspension, and made from that reclaimed precipitate of 1 part of gold in 2,000,000 parts of water.

3. MECHANICAL DIVISIBILITY.

The presence of a metal in a trituration can be demonstrated microscopically, *with high powers,* only when the observer uses reflected light. For this purpose I used Professor Hamilton L. Smith's Illuminator in 1867, and the identical instrument was employed in the following researches.

By its use the metallic gleam of gold is seen; by transmitted light all metals look opaque and color does not aid in distinguishing them.

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After trying many methods of mounting I am best satisfied with the following: Dissolve a little of the trituration in distilled water on a slide over a spirit-lamp. All trace of the crystalline structure of the sugar of milk is lost: only a transparent homogeneous film remains on the slide. Mount in Deane's gelatine (as it contains sufficient water to prevent crystallization); fasten the cover carefully with Bell's cement; finish with asphalt varnish, and throw on a ring or two of zinc cement.

Only by thus dissolving the trituration on the slide can we be sure that the most minute particles in that trituration are retained.

A mounting of the 9^{x} trituration of gold, and one of plain and pure Sugar of milk shall present appearances so similar under the illuminator as to make the diagnosis of real gold from "bogus" a matter of absolute uncertainty, *so far as my resources for illumination are concerned.*

Having found what was deemed to be gold in a certain trituration, specimens of the same trituration were treated under the microscope with Sulphuric acid, with Nitric acid, and with Nitro-hydrochloric acid. If the gleaming "sparks" withstood the Sulphuric acid and the Nitric, still shining through this cleansing bath, and if they disappeared in the Nitro-muriatic acid, forming bubbles of (hydrogen) gas, they were held to *be gold.*

The slide marked "B," accompanying this paper, shows gold in the 12^{x} *trituration,* with a power of 125 diameters. *The vanishing-point is not reached in the* 12^{x} *trituration.*

I will report upon higher triturations elsewhere, and at a future time—not having them to examine now.

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XV.

THE OBJECTS AND METHODS OF HAHNEMANN IN ATTENUATING MEDICINES.

By Lewis Sherman, M.D., Milwaukee, Wis.

I. OBJECTS.

The world is indebted to the genius of Samuel Hahnemann for the development of the law of cure by the similar remedy.

With the development of this law peculiar doctrines have appeared which have been supposed to be its postulates and corollaries. Notable among these doctrines are:

a. The primary and secondary actions of medicines.

b. The homœopathic medicinal aggravation.

c. The single remedy.

d. The diminution of the dose.

There have appeared also certain heresies. Notable among these are:

a. Itch pathology.

b. Isopathy.

c. Keynote selection.

d. Dynamization by succussion.

The doctrine of the diminution of the dose and the heresy of dynamization are intimately connected with the subject of attenuation.

From the time of his announcement of the homœopathic law of cure in 1796 to the period of his invention of the psora theory (1825 to 1828), Hahnemann's professed object in the attenuation of remedies was to *diminish* medicinal action, and thus avoid unnecessary medicinal aggravation. He held that the diseased organism is morbidly sensitive to the action of the homœopathic

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remedy, and that therefore the dose must be reduced in strength. He taught, however, from first to last that the dose must not be reduced below the point at which it is capable of producing medicinal aggravation.

The following quotations from Hahnemann's writings, from the period 1796–1825, will be seen to substantiate these statements:

In the essay on "Scarlet Fever" (1801) he says that the $\frac{1}{43\,200}$ of a grain of extract of *Belladonna* is "too large a dose." The $\frac{1}{2\,400\,000}$ of a grain is recommended instead. The object of this dilution was to diminish the power of the medicine; for, he remarks, "We will sometimes meet with children who possess naturally such timorous, tranquil dispositions that in them the dose above indicated ($\frac{1}{2\,400\,000}$ gr. to $\frac{3}{1\,500\,000}$ gr.) for children of their age will not suffice to protect them from scarlet fever. The physician may, therefore, be allowed to increase it somewhat, etc."

In *The Medicine of Experiences*, Berlin, 1805, he says: "None but the careful observer can have any idea of the height to which the sensitiveness of the body to medicinal irritations is increased in a state of disease. It exceeds all belief when the disease has attained a great intensity. An insensible, prostrated, comatose, typhoid patient, unaroused by any shaking, deaf to all calling, will be rapidly restored to consciousness by the smallest dose of *Opium*, were it a million times smaller than any mortal yet prescribed. The sensitiveness of the diseased body to medicinal irritations increases to such a degree that, powers commence to act on and excite it whose very existence has been denied, because they manifest no action on healthy, robust bodies, nor in many diseases for which they are not suited."

In the *Spirit of the Homœopathic Doctrine of Medicine*, 1813, he says: "The human organism . . . . . when it is diseased is, beyond comparison, more affectable by homœopathic medicine than by any other."

During this period he held that the processes of attenuation *diminished* the power of the medicine, but that this diminution was partly compensated for by the sensitiveness of the diseased organism to the homœopathic remedy. The ratio of diminution

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of medicinal power he states to be about *four* for each degree of the centesimal scale; that is, the 2d dilution would be one-fourth as strong as the first; the 3d dilution one-fourth as strong as the second, and so on.

Following this ratio the 30th dilution would produce one-quintillionth ($\frac{1}{1000000000000000000}$th), as much effect as the strong tincture in the same dose.

It is true that Hahnemann in this period asserts that, a given quantity of medicinal substance will produce more effect in a diluted than in an undiluted form; but he attributes this increased effect to the presentation of a greater number of points of contact with living tissue; and he expressly states that one-tenth the quantity will produce a little more than one-half the effect. *Organon*, all the editions.

In the year 1825, the seventy-first of his age, the forty-sixth after his graduation, the twenty-ninth of his homœopathic practice, the fourth after the injunction forbidding him to dispense his own medicines, two years before the formal announcement of his absurd itch, clap, and pox theory of chronic diseases, Hahnemann propounded the theory of dynamization. The statement of this theory is made in the preface to the fourth volume of the *Materia Medica Pura* in the following language:

"By the processes of succussion and trituration there ensues not only the most intimate mixture, but at the same time such a great and hitherto unknown, undreamed of change, by the development and liberation of the dynamic powers of the medicines as to excite our astonishment.

"By means of the processes of shaking and trituration we not only succeed in impregnating gradually and most intimately every particle of *unmedicinal substance* with the *power* of the medicine, but also in *developing* that power to an almost boundless extent.

"The fact that the inmost power of a medicinal agent can be infinitely developed by trituration and succussion had never been known heretofore. I have been the first to discover the great fact that the power of liquid medicines can be developed by *succussion*, and that of dry substances by *trituration*, to such an ex-

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tent that substances which, in their natural crude form, did not seem to have any power, acquire an astonishing medicinal power.

"After triturating one grain of Gold with ninety-nine grains of Sugar of milk, and continuing this trituration up to the twelfth potency, the remedial virtues of Gold become roused to such an extent that a man who was impelled by intolerable anguish to take his life needs but to *smell* for a few moments of such a preparation of Gold in order to recover his cheerfulness and love of life.

"It is self-evident that in proportion as the power of medicinal substances is developed by trituration they ought to be administered in smaller doses."

In the preface to the sixth volume of the *Materia Medica Pura* (1827) he says:

"If we wish to attenuate a drop of Sundew (Drosera rotundifolia) to the decillionth (30th), but shake each of the bottles with twenty or more succussions from a powerful arm, in the hand of which the bottle is held; in that case this medicine, which I have discovered to be the specific remedy for the frightful epidemic whooping-cough of children, will have become so powerful in the fifteenth attenuation (spiritualization) that a drop of it given in a teaspoonful of water would endanger the life of such a child; whereas, if each dilution-bottle were shaken but twice (with two shakes of the arm) and prepared in this manner up to the decillionth attenuation, a sugar globule, of the size of a poppy-seed, moistened with the last attenuation, cures this terrible disease with this single dose without endangering the health of the child in the slightest degree."

In the preface to *Thuja*, in the fifth volume of *Materia Medica Pura*, 1828, he says that the higher dilutions of this medicine, *e. g.*, the 30th, or even the 60th, if each dilution be shaken ten or more times, so far from being inferior in strength to the lower dilutions, they are actually more powerful; consequently he recommends that each dilution be prepared with only *two* succussions.

"I dissolved," says he, "a grain of *Soda* in an ounce of water mixed with alcohol in a vial which was thereby half full, and shook this solution continuously for half an hour, and this was, in dynamization and energy, equal to the 30th development of

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potency." This shows that succussion and not attenuation was the essential feature of dynamization.

In the last edition of the *Organon* (1833), Hahnemann recommended that all provings on the healthy should be made with the 30th attenuation, on the ground that the lower attenuations would not "disclose the same wealth of symptoms."

A remarkable feature of this theory of dynamization is that, by the process of trituration and succussion, the medicinal substance *loses its chemical properties.* According to the discoverer, a globule of *Phosphorus* 30th, in a powder of milk sugar, which may have been prepared for a year or more, will at the end of that time undergo no alteration from the action of air, but will still act perfectly as *Phosphorus* and not as *Phosphoric acid.* "A globule of the 30th potency contained in a vial, prepared twenty years before, still continues to possess its power undiminished, and may be used with perfect confidence for the cure of disease."

Now we know that *Phosphorus* in the tincture, the 3d, the 4th, or the 5th decimal dilution, when put on pellets and exposed to the action of the air, becomes converted into *Phosphoric acid* by reason of its strong affinity with the oxygen of the atmosphere.

These assertions of Hahnemann clearly demonstrate that a dynamized medicine, though deprived of its power to act on dead matter, still retains in an exalted degree its power to affect the human organism. This explains how our high-potency friends get the effects of Nitric acid which has been diluted in *alcohol* and left for years in contact with *sugar!*

I think I have made it clear that Hahnemann's object in attenuating medicines was not the same in the early and middle part of his life as it was in his declining years. In the latter period he had in view, the transference of the properties of the medicine from the medicinal substance to the alcohol, or the sugar of milk, the separation of the *qualities* of matter from the substance in which they inhered, or, to use his own words, "the spiritualization of the dynamic property," the unveiling and vivifying of the medicinal spirit, the increase and exaltation of the strength of the medicine, in order that it might cause disease in the healthy and cure the sick, when undynamized medicine would fail for want of power.

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As in the promulgation of the psoric, syphilitic and psycosic theories of chronic diseases as the basis of treatment, the illustrious founder of homœopathy overthrew the fundamental principles of his grand system, so, in the theory of dynamization, he renounced the teaching and experience of the thirty years of his vigorous manhood, for the visionary delusions of decrepit old age. I say "visionary," because he never performed a single experiment to demonstrate the truth of his theory, nor offered a single fact in corroboration of his rash, dogmatic assertions; "decrepit," because, in still later years, he renounced his succussion doctrine, and no longer fearing the terrible consequences of too much dynamization, recklessly went to shaking as vigorously as ever, declaring that all the shaking in the world would not dynamize an undiluted substance. This is shown by the fact that he retained, in the fifth edition of the *Organon* (1833), the passage in which he gives the arithmetical ratios of diminution of strength by attenuation.

The real object in attenuation is, in case of liquids and easily soluble solids, to diminish the force of drug action; in case of solids not readily soluble, to promote absorption and to increase the number of points of contact.

II. METHODS.

Hahnemann's method of attenuating liquid medicines to the 30th degree was as follows:

Take thirty new, clean vials, holding each about half an ounce; fit them with good new, clean corks; label them all with the name of the medicine to be attenuated; number the vials by marking on the corks and on the labels the numbers from one to thirty, inclusive; put into vial number *one* as much of the strong tincture as will represent a drop or grain of the original substance; add as many drops of alcohol as with the quantity of medicinal tincture used will make one hundred drops of liquid; cork the bottle and shake it with ten jerks of the arm.

This constitutes the first dilution or development of power.

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Put one drop of this first dilution into vial number *two*, and add ninety-nine drops of alcohol; shake as before.

This constitutes the second dilution, or second development of power.

The succeeding dilutions up to the thirtieth were made in the same manner as the second, each from the next lower. The alcohol must be of the purest kind.

In the attenuation of insoluble substances the first three degrees were made by trituration, as follows:

Take a clean porcelain mortar and pestle with roughened grinding surface; put into it thirty-three grains of sugar of milk; add one grain of the medicinal substance; stir for a short time with a clean ivory spatula; triturate strongly for six minutes; scrape off the particles which adhere to the mortar and pestle, and stir for four minutes; triturate again for six minutes; scrape and stir for four minutes; add thirty-three grains of sugar of milk and repeat the process of triturating, scraping and stirring for twenty minutes; add again thirty-three grains of sugar of milk, and repeat again the process of triturating, scraping and stirring for twenty minutes.

This constitutes the 1st trituration or the 100th development of power.

Treat one grain of this 1st trituration in the same manner with ninety-nine grains of sugar of milk.

This constitutes the 2d trituration, or the 10,000th development of power.

Treat one grain of this 2d trituration with ninety-nine grains of fresh sugar of milk in the same manner.

This constitutes the 3d trituration, or the 1,000,000th development of power.

Hahnemann affirmed that any substance brought to this degree of attenuation is rendered soluble in alcohol and water.

The 4th attenuation was prepared by adding to one grain of the 3d trituration, in a vial, fifty drops of distilled water, aiding the solution of the sugar of milk by a few turns of the bottle on its axis, adding fifty drops of alcohol and shaking with ten jerks of the arm.

The 5th and succeeding degrees of attenuation to the 30th are

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made by adding to one drop of the next lower attenuation ninety-nine drops of alcohol and shaking with ten jerks of the arm.

Such is the method of Hahnemann. It is remarkable for its regularity, neatness, and accuracy, as well as for the scrupulous care he inculcates to avoid the introduction of foreign substances whose presence might modify the action of the extremely minute doses he prescribes.

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XVII.

THE DOSE AND DEGREE OF ATTENUATION.

By C. Wesselhœft, M.D., Boston.

Prior to the last edition of the *Organon* Hahnemann seems to have sought to establish no general limit to attenuations, but in his last edition (1833) he recommended the 30th centesimal as the universal limit, which, for the sake of uniformity, it would be best to adopt. In a footnote to § 287, and in the later edition of the *Chronic Diseases*, he sanctions the use of much higher attenuations. These "high potencies" were upheld in Germany by Gross (*H. Z.*, vol. No. 6), who adduced the 1500th attenuation as proof that the limit had not been reached. Korsakoff, a Russian general and an enthusiastic layman, introduced certain methods of producing higher attenuations. (*Archiv*, vols. xi and xii.) Hahnemann furnishes an appendix, in which he expressed his mistrust of Korsakoff's method, which consisted chiefly in the preparation of what were subsequently called dry contact potencies.

Hering about that time, in the *Archiv* (vol. xiii), advocated proving with the 30th potency, and afterwards exerted his influence in favor of high potencies, as prepared by Jenichen, who introduced them about the year 1840. The latter claimed to have reached the 100th, and later the 1600th potency. He was ardently defended by Drs. Stapf and Gross. Jenichen died in 1849.

In this country the question of high potencies was not much agitated until about the year 1857, when Lehrmann's preparations, carried up to the 200th degree, were introduced chiefly by Dr. Dunham, who derived his inspiration from Bönninghausen, in Münster.

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Since that time Dr. B. Fincke,* of Brooklyn, N. Y., proclaimed his high potencies to the world, claiming to have reached the 100,000th attenuation or more, and found no inconsiderable number of adherents.

These preparations subsequently proved to have been made by means of an ingenious patent contrivance, by which a medicine can be diluted to an extreme degree in a short time.

Others, finding that such preparations promised to enjoy a still greater degree of popularity, invented independent methods of preparing "high potencies." An extremely ingenious little mechanism for such a purpose was constructed by Mr. Boericke, of Philadelphia. This apparatus is so constructed that a large quantity of alcohol is brought in contact with a drop of medicine and subjected to a great amount of succussion.

Since that time Dr. Samuel Swan, of New York, has also prepared high potencies, claiming that he has reached the 1,000,000th centesimal. His apparatus forcibly throws a stream of water into the potentizing glass.

The first volume of the new English periodical called the *Organon* contains a description of an apparatus called the "Centesimal fluxion potenizer," invented by Dr. Skinner, of Liverpool. This registers potencies up to the 1,000,000th.

Still more recently Dr. Martin Deschere has invented and described another potentizing apparatus.

Such, in brief, are the successive steps by which homœopathists have advanced in the scale of attenuation. It is an interesting phenomenon that the dose formed in Hahnemann's time as well as now, in the minds of many, is the test of genuine homœopathic belief and practice.

The accurate proving of drugs has received but slight attention in comparison with the zeal displayed in the invention of new methods of attenuation. It seemed as if imperfectly proved medicine, unsubstantiated assertions of the superiority of highly potentized medicines, ancient traditions introduced into symptom lists in place of accurately confirmed observations, were all to be counterbalanced or annulled by increasing the attenuation, or

* On High Potencies and Homœopathics. Philadelphia: A. J Tafel. 1865

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"potency," as it is called, and that this high degree of supposed refinement could effect the, as yet unavoidable, inaccuracies of the Materia Medica.

This peculiar phenomenon has now been developing for many years, without the least attempt on the part either of ardent potentizers or of their opponents to inquire into the nature of matter itself. Everything was taken for granted, or Hahnemann's views on the subject fully and literally adopted, and unconditional compliance expected of all who call themselves homœopathists. Thus it is demanded of us to adopt without other than clinical tests Hahnemann's views, that insolubles become soluble above the 3d centesimal, and that soluble substances are infinitely divisible.

Thus far all negative results have been absolutely disregarded and excluded. Even if they should prove to be less frequent than the positive, their weight as an integral part of statistical evidence would necessarily change the aspect and interpretation of our clinical results, furnishing fewer but more reliable data.

Whether originating with Hahnemann or not, the method of dilution for the purposes of attenuation, has been of such therapeutical value, and has been the means of working such wonderful changes in the molecular constitution of matter, that he deserves to be called the founder of molecular pathology, as well as of molecular therapeutics.

Much evidence has been lately deduced by Mayrhofer, Attomyr, J. Edward Smith, and myself, to prove that the Hahnemannian scale of attenuations has been erroneously applied to many substances, which are not soluble in alcohol and water.

We will now consider to what extent attenuation may be carried by means of dilution of soluble substances, and inquire how far the results obtained by physicists, in the last decade, agrees with the assumption of infinite divisibility by the means applied by Hahnemann and his successors in the method of attenuating medicines.

I use the word attenuation and dilution as distinct from potentization, which is not regarded as synonymous with it, as it is well known.

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THE ULTIMATE PARTICLES OF MATTER.

Molecules and atoms have an existence, which is scarcely a matter of doubt to-day. Their dimensions are calculable and may be approximately demonstrated. Matter consisting of molecules has not a homogeneous, but a "grained" structure, as it is called. When matter is subdivided beyond the constitution of this grained structure, the entity of its molecules is destroyed and they are resolved into atoms of their elements. The limit where such decomposition takes place has been calculated for several substances with approximate exactitude by means of physics and mathematics.

For the data given below we are indebted to the English physicist, Sir William Thompson, and also to Professor J. Clerk Maxwell, who have based their results on the calculations of certain German mathematicians, especially those of Clausius, of Bonn, Lohnschmidt, and others.

It is not within my ability to state in detail the methods and means employed, as these experiments and calculations are based upon the higher branches of physical and mathematical science, which a much-occupied physician cannot hope to cultivate. The calculus of probabilities furnishes facts which can be merely stated in a few brief pages. It will be proper, therefore, to let experts speak for themselves.

In demonstrating the size of atoms* the following conclusions were arrived at. In order to illustrate the fact that matter is only apparently homogeneous, he cites Cauchy's law, which shows that in palpably homogeneous bodies, such as glass or water, contiguous portions are not similar when their dimensions are moderately small fractions of the length of a wave of light.† In short, the diameter of a molecule, or the distance from its centre to that of a contiguous molecule, in any transparent liquid or solid, exceeds $\frac{1}{1000}$th of a wave length of light, or a two hundred millionth of a centimeter.

* Size of Atoms, a lecture by Sir William Thompson, reprinted in Nature, March 31st, 1870, p. 557.

† See also The New Chemistry, by Josiah P. Cook, Jr., New York. D. Appleton & Co., 1874, p. 21, et seq.

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These calculations, which permit of such measurements, are a strong support of the non-homogeneousness of matter. This is compared to brickwork, which at a distance appears to the eye homogeneous, but is in reality capable of being broken up into bricks with interspaces of mortar. Viewing a large mass composed of large particles at a distance, and another consisting of inconceivably minute particles in close proximity to the eye, has the analogous effect of a homogeneous appearance. Long before this, Cauchy, Newton, and after him, La Place, calculated the velocity of sound very accurately, on the theory that matter (air) consists of molecules. The exactness of these calculations, both as regards the nature of light and the velocity of sound, furnish strong evidence of the molecular nature of air, and admit even of a calculation of the dimensions of its ultimate particles.

But Sir William Thompson has added evidence in this direction from three other sources, which, though well known, deserve brief mention here. In producing contact electricity by approximating zinc and copper plates, it is not the thickness of the plates which augments their force but their number. The amount of force developed, that is work done, by the pile an inch in thickness, will be greater and greater as there are more plates added. Therefore it is only necessary to make the plates thinner and thinner, and more numerous in proportion, to get more work done by the same amount of mass, till at last force enough is obtained in the form of heat to melt the whole pile of zinc and copper. Or, when these shall have reached a thinness of a four-hundred millionth of a centimeter, the work and heat equivalent will be increased 990 times. This is more than is required to melt the whole mass, that is, to form a chemical combination. Hence, plates of zinc and copper of 300,000,000 centimeters in thickness, placed close together, approximate the attenuation required for a chemical combination, that is, to the diameter of a molecule.

These figures, at the same time, agree very well with Cauchy's calculation of molecular distances and lengths of waves of light.

In the *Proceedings* of the Royal Society for April, 1858, is an article by the same eminent author, "On the Thermal Effects of Drawing Out a Film of Liquid." These illustrations throw much

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light on the size of ultimate particles of matter, which conclusions are reached by the following deduction from given facts:

It is proved (from the second law of thermo-dynamics) that about half as much more energy in the shape of heat must be given to the film to prevent it from sinking in temperature while it is being drawn out into a soap-bubble. Hence the intrinsic energy of a mass of water in the shape of a film kept at constant temperature, increases by twenty-four milligram-millimeters for every square millimeter *added to the area*. For the work done in stretching a water film to any degree of thinness reckoned in millimeter-milligrams is equal to sixteen times the number of square millimeters by which the area is augmented, provided the film is not made so thin that there is any sensible diminution of contractile force.

THE CONTRACTILE FORCE RECKONED.

Suppose a film to be given with a thickness of a millimeter, and suppose its area to be augmented ten thousand and one fold, the work done per square millimeter of the original film would be 240,000 millimeter-milligrams. The heat equivalent of this is more than one-half of a degree Centigrade of elevation of temperature of the substance. The thickness to which the film is reduced in this supposition is very approximately a ten thousandth of a millimeter, while there is yet no sensible diminution of contractile force.

But now suppose the film to be stretched to a twenty millionth of a millimeter, the work done would be more than 2000 times greater than first calculated. The heat equivalent would be 130 times the quantity required to raise the temperature of the film one degree Centigrade. A much smaller quantity of work (*i. e.*, heat) would convert it into vapor long before it reached this point.

The conclusion is unavoidable that a film of water falls off greatly in contractile force before it is reduced to a thickness of a twenty millionth of a millimeter. Hence it is scarcely possible, upon any conceivable molecular theory, that there can be any considerable falling off of contractile force, as long as there are

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several molecules in thickness. It is, therefore, nearly evident that there are not several molecules in the thickness of a twenty millionth of a millimeter of water.

Sir W. Thompson furnishes other valuable evidence with regard to the size of molecules and their numbers in given volumes of matter. These calculations were partly dependent on the investigations of others, but as Professor J. Clerk Maxwell is mentioned as the chief authority in regard to deductions from the kinetic energy of gases, I will quote his conclusions, so far as they relate to the subject before us.

At this period it will be well to define, what was taken for granted in quotations from the previous calculations, namely, the terms molecule and atom have been used somewhat indiscriminately, but in modern times they are defined and their definitions are universally accepted.

An atom, says Maxwell,* is a body which connot be cut in two. A molecule is the possible portion of a particular substance. If any portion of a molecule were removed, it would no longer be able, along with an assemblage of other molecules similarly treated, to make up a mass of the original substance.

Every substance, simple or compound, has its own molecules. If these molecules be divided, their parts are molecules of a different substance. They become the substances of which the molecules are constituted. An atom, then, must be a molecule of an elementary substance. Every molecule is *not* an atom, but every atom is a molecule.

A molecule of common salt, for instance, if divided, will yield one atom of chlorine, and one of sodium.

It was formerly believed that the molecules of all bodies are in motion, and this is not only held to be the case now, but accurate data underlying the most exact application of physics and chemistry are derived from the study of such motions.

In solids the motion of molecules is imperceptible, while in liquids and gases, they are not confined to definite limits, but work their way through the whole mass, as has been proved.

* Molecules. Lecture delivered before British Association, at Bradford, by Professor J. Clerk Maxwell. *Nature*, vol. viii, p. 437 et seq. September, 1873.

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It is now well understood that the motion of flying molecules is the cause of the pressure of gases. This principle was first stated by Bernoulli, and again by Lasage of Geneva. The latter endeavored to explain with this principle the law of gravitation, but his theory has not been accepted. Later, Herapath, in his *Mathematical Physics*, 1847, and Dr. Joule furnished evidence upon the subject. Professor Clausius of Bonn, however, was the first to give precision to the subject of the kinetic laws of molecular motion in gases. It is to him that we owe, to a very large extent, what has been accomplished, for he not only found a formula, but also conceived a new dynamic idea, by which we are enabled to establish several important conclusions, without much symbolical calculation.*

It would exceed the limits of this article to introduce the whole evidence in relation to this vast subject. Those who would follow out the mathematical calculations of Professor Clausius, upon which Professor Maxwell based his, are referred to the article cited.

If the velocity of molecules is given, and the number varied, the pressure in a vessel of given size is, therefore, proportional to the number of molecules, that is, to the quantity of gas in it. This explains the fact, discovered by Robert Boyle, that the pressure of air is proportional to its density. The same applies to mixed gases, each of whose molecules moving about and colliding with the others, will have the same energy of motion, as shown by J. Clerk Maxwell, and further substantiated by Dr. Ludwig Bolzmann. According to these researches, a cubic centimeter of every gas, at standard temperature and pressure, contains the same number of molecules (Gay-Lussac's *Law of Equivalent Volume of Gases*). The next step was the calculation of the actual velocity of a molecule of hydrogen. This was first done by Dr. Joule. This done, the exact distance a molecule travels before striking another could be determined by experiments on the diffusion of the gases; Professor Clausius calls this distance the mean path of a molecule.

* On the Dynamical Evidence of the Molecular Constitution of Bodies. Lecture, delivered at the Chemical Society, February, 1875, by Professor J. Clerk Maxwell. *Nature*, vol. ii, p. 356.

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The rationale of this calculation is best described by Sir W. Thompson in the lecture quoted above. We may regard it as an established truth of science, says this author, that a gas consists of moving molecules. The mean length of proximately rectilinear portions of path, of each molecule, is many times greater than the average distance from the centre of each molecule to the centre of the molecule *nearest* it at any time. Clausius proves by simple application of the calculus of probabilities that the average length of the free path of a particle, from collision to collision, bears to the diameter of each globe (molecule) the ratio of the whole space, in which the globes move, to eight times the sum of the volumes of the globes. It follows that the number of the globes, in unit volume, is equal to the square of this ratio divided by the volume of a sphere whose radius is equal to that average length of free path.

From the calculations of Joule, Maxwell, and Clausius, the average velocity of the molecules of oxygen, nitrogen, or common air, at ordinary temperature and pressure, is about 50,000 centimeters per second; and the average time from collision to collision, the five-thousand-millionth of a second. Hence, the average length of path of each molecule, between collisions, is about one-ten-thousandth of a centimeter. Now, according to the theorem of Clausius, the average length of this path cannot be more than five thousand times the diameter of the gaseous molecule, and the number of molecules in a unit of volume cannot exceed 25,000,000, divided by the volume of a globe, whose radius is that average length of path. Taking now the preceding estimate, one-one-hundred-thousandth of a centimeter, for the average length of path, we conclude that the diameter of the gaseous molecule cannot be less than one-five-hundred-millionth of a centimeter; nor the number of molecules in a cubic centimeter of the gas (at ordinary density) greater than 6×10^{21}, or six thousand million million.

These calculations apply to gases; but from these the molecular constitution of fluids can also be deduced, as the following statements will clearly demonstrate:

The densities of known liquids and solids are from five hundred to sixteen thousand times that of atmospheric air, at ordinary

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pressure and temperature; hence, the number of molecules in a cubic centimeter may be from 3×10^{24} to 10^{28} (three million, million, million, million, to one hundred million, million, million, million). In a cubic arrangement of molecules the distance from centre to nearest centre in solids and liquids may be estimated at from one-one-hundred-and-forty-millionth to one-four-hundred and-sixty-millionth of a centimeter. These lines of argument establish with a high degree of probability the conclusion that, in any ordinary liquid, transparent, solid, or seemingly opaque solid, the mean distance between centres of contiguous molecules is less than the hundred-millionth, and greater than the two-thousand-millionth of a centimeter.

Turning once more to Professor Maxwell's statement, we find the following additional confirmation of the preceding conclusions:

The resistance of liquids to compression makes it probable that their molecules must be about the same distance from each other as two molecules are when they encounter each other in a gas. This subject was tested by Lorenz Meyer, who compared the densities of different liquids with the calculated relative densities of the molecules of their vapors, and found a remarkable correspondence.

Lohschmidt deduced from the dynamical theory the following remarkable proportion:

As the volume of gas is to the combined volume of molecules contained in it, so is the mean path of a molecule to one-eighth of the diameter of a molecule.

In this way Lohschmidt, in 1865, first calculated the diameter of a molecule. Independently of him and of each other, Mr. Stoney, in 1868, and Sir W. Thompson, in 1870, published similar results, as we have seen.

According to the table which Maxwell has calculated from Lohschmidt's data, the size of the molecules of hydrogen is such that about two million of them in a row would occupy a millimeter, and a million, million, million, million (10^{24}) would weigh between four and five grams.

In a cubic centimeter of any gas, at standard pressure and temperature, there are about nineteen million, million, million

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molecules. As we have seen, Sir W. Thompson has calculated this number at six thousand million, million, millions, so that we have a difference between nineteen and six thousand in the calculation. Although it has no direct bearing on the conclusion we may have to draw from these calculations, the reader will desire to know the general conclusion arrived at by physicists. In this connection it is interesting to know that Mr. H. C. Sorby* has compared the calculations of Messrs. Stoney, Thompson, and Maxwell. Each of these observers determined the number of ultimate atoms in a given volume of any permanent and perfect gas, and reduced their results to an average of 6,000,000,000,000 molecules in a cubic $\frac{1}{100}$ of an inch.

There is no question that more numerous calculations will bring this average much nearer the truth. But, as Mr. Sorby informs us, Professor Clerk Maxwell's calculations are based on more correct data than those of the other observers, we will in our future deductions use these as a standard.

EFFECTS OF ATTENUATION OR DILUTION.

We have now arrived at the knowledge of certain data with regard to the constitution of matter, which we may apply to the hypotheses entertained regarding the result of attenuation, potentiation, or dynamization of medicines, for so long a time a subject of contention in the school of Hahnemann; and, although this question has been avowedly secondary and subservient to that of the law of similars, it has practically been made the standard by which members of our school measure each other. It also constitutes the most salient point for the aggressions of the old school.

The method of attenuation by the progressive dilution or division of a given drop of fluid by one hundred, has been above described. It might also be defined as progressive multiplication of the denominator of the fraction of $\frac{1}{100}$ by the power of 100. This process has been repeated in modern methods of potentiation, a million times and more.

Thus to furnish a few arithmetical ocular demonstrations of

* H. C. Sorby, F.R.S., Anniversary Address as President of the Royal Microscopical Society, from American Laboratory.

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what is actually reached by this method of subdivision, we would have in the 1st centesimal attenuation $\frac{1}{100}$, in the 5th, $\frac{1}{10000000000}$, in the 10th, $\frac{1}{10000000000000000000}$, etc.

In the 20th we would have the ten thousand sextillionth of the original drop or grain;* in the 30th, a fraction of the original medicine represented by 1 as the numerator, and 1 with sixty noughts behind it as the denominator, for which we hardly have room on ordinary paper. It is, therefore, conveniently expressed in modern mathematics by $\frac{1}{10^{60}}$. The exponent 60 divided by 2 gives the number of the attenuation reached; divided by 6, the number of millionths.

Sir W. Thompson furnishes us with the proportions which a molecule according to his figures bears to the diameter of the earth. "To form some idea of the coarse-grainedness indicated by this conclusion, imagine a rain-drop or globe of glass as large as a pea to be magnified to the size of the earth; each constituent molecule being magnified in the same proportion, the magnified structure would be coarser-grained than a heap of small shot, but probably less coarse than a heap of cricket-balls."

The difference between small shot and cricket-balls is, probably, the difference between Thompson's and Maxwell's calculation.

If, therefore, a molecule, the dimensions of which Thompson states are no less than the $\frac{1}{5000000000}$ of a centimeter, were as a small shot to the earth, what would a particle of matter contained in the 30th centesimal attenuation be? It would be equal to the difference between a five-hundred-millionth of a centimeter and $\frac{1}{10^{60}}$ of a drop—in other words, a septillion times smaller.

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* I cannot agree with Dr. F. Katsch (Alg. H. Z., vol. 98, No. 23), that Hahnemann committed a great error in calculating that the 30th contains the decillionth part of a drop of original medicine. The calculations of Professor Jolly regarding molecular contraction do not seriously invalidate Hahnemann's simple arithmetical problem. Although only 3000 drops of alcohol are used, nevertheless in order to dilute the *whole* original drop to the 30th, a quantity of alcohol would be required exceeding the volume of the earth 925 octillion times. In this the Academy of France is probably correct.

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In order to ascertain what relation the fractions, expressing the quantity of medicinal substance contained in our attenuations, bear to Thompson's and Maxwell's molecular dimensions and weights, let us first take Maxwell's conclusion "that the volume of a substance, when reduced to the liquid form, is not much greater than the combined volume of the molecules." It follows that if a liquid represents very nearly the combined volume of its molecules, the volume of a drop of liquid would represent the volume of its molecules.

One drop of water is equal to one minim or 1.0533 of a grain, which we will express by a common fraction of $1\frac{1}{25}$ of a grain.

Maxwell calculates that a million, million, million, million of molecules weigh between four and five grams.

Let us say $4\frac{1}{2}$ grams $= 69\frac{3}{10}$ grains, or $66\frac{93}{125}$ minims.* This represents the number of drops of water in $4\frac{1}{2}$ grams, which, as we are dealing with huge numbers of molecules, we will call by an even number, 67. Dividing with this the number of molecules (one million, million, million, million), we obtain a quotient of a little less than fifteen thousand million, million, millions, which represents the number of molecules in one drop or minim in weight, a figure of 23 places, beginning with 14925, etc.

Now this is a huge sum of particles occupying a small space. Our method of applying medicines demands that this mass of molecules should be spread over a much larger space in order that each minutest portion may have full opportunity of exerting its special and peculiar influence upon the organism. Numerous facts show us that it will exert its power less potently when administered in bulk, undiluted or unattenuated. It has been assumed that the divisibility of soluble substances and liquids is infinite, but the researches of modern times almost entirely deny this.

If the volume of a drop represents (very nearly) the volume of its molecules, then one molecule would represent the ultimate fractional part of a drop.

The foregoing simple sum in division distinctly shows that the

* One grain in weight being equal to 1.0533 minims.

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11th centesimal attenuation would represent the limit to which this process may be carried according to the number of molecules in a drop of liquid of the density of water, taking Maxwell's calculation as our standard.

But let us suppose that Maxwell's calculation fell too far below the actual number of ultimate particles, and that Thompson's figures approached much nearer to the actual rate. The data from which we started were that, according to Maxwell, 10^{24} molecules of hydrogen weigh $4\frac{1}{2}$ grams or 67 minims, and that a cubic centimeter of hydrogen contains 19×10^{18} molecules, while according to Thompson a cubic centimeter of hydrogen contains 6×10^{21} molecules. Hence, any given quantity of hydrogen contains, according to Thompson, $\frac{6 \times 10^{21}}{19 \times 20^{8}}$ times as many molecules as it does according to Maxwell.

The quotient found by dividing the numerator of this fraction by its denominator is 3.158×10^{3}. Now, by reducing Maxwell's proportion to Thompson's, by multiplying the above quotient by 15×10^{21}, we get 4.737×10^{25}, which would represent the number of molecules in a drop of liquid according to Thompson; that is, between 4 and 5; while we would have only between 1 and 2, if the 11th attenuation is the limit according to Maxwell. The 12th or 13th at most would be the limit of our method of attenuation, according to Thompson's calculation of the number of molecules in a drop of the density of water.

SUFFICIENCY OF ELEVENTH CENTESIMAL ATTENUATION.

The 11th centesimal dilution or attenuation potency, if you will, should be a practical limit of our method of attenuating medicines. I have already furnished illustrations of our want of practice in estimating enormous figures representing volumes or distances, and shall illustrate the subject by more examples.

The 11th centesimal dilution would somewhat exceed the number of molecules in a drop, which would be represented by a figure with 23 places, beginning with 14925, etc., or fourteen thousand nine hundred and twenty-five mill. mill. mill. To be always on the safe side, we have called this in round numbers

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fifteen thousand mill. mill. mill. molecules in a drop, of which each molecule is a fractional part, expressed by the last figure as a denominator, with 1 for a numerator.

That is, our 11th attenuation has not yet reached the smallness of a molecule.

But let us proceed to the 12th centesimal; multiplying that numerator of our 11th by 100, it would immediately exceed by that proportion the limits of the size of a molecule and *numbers of molecules in a drop.* Hence this limit should satisfy the mind of even the most refined materialist.

We should establish a limit somewhere for the mind to rest upon.

It is a proof of our limited powers of conception, for want of training, to think we have not reduced matter far enough when we have reached the degree of smallness of a molecule.

A scale of attenuations reaching from 1 to 11 is enough to satisfy even those who boldly reject the agency of material influences, and candidly believe in spiritual agencies.

A drop of medicine reduced to the eleventh degree of attenuation on the centesimal scale, would be the ten-thousand-trillionth part of the original drop.

Now, according to Schimko,* the body of the sun is eight hundred times greater than all the planets taken together. Still it is much too small to form a conception of its septillionth part, which would have barely the size of 333,000th part of a poppy-seed. Now what would be the septillionth part of a drop or grain, if we cannot form a conception of such a fractional part of the sun? Ah, but we are only dealing with the eleventh. Very well, that is just about one-half of a septillion; but is it easier for us to form an adequate conception of one-half of the 333,000th part of a poppy-seed or one-half of one-ten-thousand trillionth part of the sun? This yet foils our imagination.

I have not made all these calculations; they have, however, never been disputed; neither have Thompson's nor Maxwell's calculations of the size of a molecule.

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* Die homœop. heilmethode in mathematischer und chemisch-geologischer hinsicht betrachted.—Teschen, 1829. 2d Edition.

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Schimko's figures and those of the Academy of France may differ, by a number or ciphers, from those of other mathematicians, but they will not vary more than the figures of the last-named authors do from each other.

After much testimony in regard to the limits of subdivision of matter, it will be unnecessary to dwell on the attenuation above the eleventh, to say nothing of the two-hundredth and millionth. It is easy enough to reach them. A few days of labor spent with the ingenious apparatus of a Fincke, Boericke, Swan, or Skinner, will reach that number. But the centesimal scale takes such enormous strides in figures, while we, unconscious of what is progressing, look on and see only a small quantity of water and a few vials.

The authorities, quoted above, differ in their calculations by a thousand millions. The assumption of round numbers, though causing slight deviations, increases the inaccuracy on the side of safety, and it will not be difficult to determine the limits within which the inaccuracy exists, and beyond which it can no longer be of importance.

But suppose, for the sake of admission, we say the twelfth or thirteenth is the limit beyond which no molecules can be carried by the process of attenuation, any attempt to distribute molecules still farther will be useless.

It follows, further, that in several attenuations, before reaching this point, say in the eighth or ninth, the molecular particles must have been reduced very greatly in number; or in other words, the substance to be attenuated or potentized must have been reduced by the method of Hahnemann to the limits of highly rarefied gas, which condition it could only maintain so long as the disintegrated particles of matter still may be presumed to exert any influence upon each other by attraction or repulsion, throughout the medium in which they are suspended. What their influences may be, can be deduced from our present knowledge of the diffusion of gases, and also the late remarkable results obtained by MM. Cailletet and Pictet, in regard to solidification of gases. Hence, unless the most careful, conscientious, and painstaking researches and calculations are erroneous,

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the limit of divisibility of soluble substances does not extend so far as had been hitherto assumed.

The 20th attenuation or potency by far exceeds all bounds of molecular distribution by dimensions so enormous that ordinary imagination can hardly realize it. Distances between the molecules of diameters of the earth would not express the degree of separation.

The above estimates have been made with regard to water. Now, most of our attenuations are made from alcohol, more or less diluted with water. But a drop of alcohol is only about one-third of that of water in size; the number of molecules in a drop of alcohol is therefore only about one-third of those of water, taking into consideration the lesser density of the former. Hence, any substances dissolved in alcohol will not bear dilution by water quite so far as watery dilutions would.

INFLUENCE ON DISTANCES BETWEEN MOLECULES.

Aside from, and independently of, the impossible diminution of size of a single molecule, another now well-known law must be considered in connection with the changes wrought in the molecular constitution of matter by extended separation of its constituent particles. It is what has been learned since Faraday's time, concerning the condensation of gases.* Without entering into the history of this process, a short statement must suffice.

The motion of molecules and their velocities have been determined, at ordinary pressure and temperature, so that according to Clausius, the molecules of common air move at the rate of 485 meters per second, those of hydrogen at the rate of 1844 meters per second.

It is now known that differences of temperature cause great differences of attraction and repulsion. Under mere mechanical pressure applied to gases, first there takes place attraction, which

* An excellent statement of the subject will be found in the Faraday Lecture, delivered before the fellows of the Chemical Society, November 12th, 1878, by Ad. Wurtz, membre de l'Institute, etc. Published in "Nature," and reprinted in "Scientific American" Supplement, 156.

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reaches a maximum; then, as the pressure is increased this attraction diminishes, and at length becomes repulsion, which is only overcome by diminution of temperature. This takes the place of mechanical pressure, and may condense gases (hitherto called permanent) into solids. On this principle MM. Cailletet and Raoul Pictet have, independently of each other, succeeded in reducing oxygen and hydrogen to liquid form.

But our method of dealing with matter in order to prepare it as a medicine, is not to condense it, but to expand it, and to increase the surface of its particles. Heat does this in the case of gases, and overcomes cohesion. We endeavor to separate molecules of matter by solution and diffusion in a liquid. We do this at the ordinary temperature at which soluble substances will be dissolved, and consequently permit themselves to be separated by the interposition of the fluid used, *i. e.*, water or alcohol.

Now, in liquids the influence of cohesion is manifest; and if two liquids combine as water does with alcohol, the particles or molecules of each must become separated by overcoming the cohesion.

This cohesion would necessarily be very rapidly overcome if, *e. g.*, the alcohol were in small proportion, while that of water were constantly increased.

Supposing we have a vial, holding one cubic centimeter of alcohol, to which we add one drop of any other liquid, say a tincture; that drop of tincture will immediately be expanded to the size of one cubic centimeter plus the volume of one drop, and its particles or molecules will be separated in proportion.

And, just as gases, if expanded and their molecules set at liberty, will fly into space and cease to exert any attraction or repulsion upon each other, just so the molecules of one drop when separated by enormous spaces, will lose their influence on each other, and the distance separating them will increase in the same ratio as the molecules of a drop are diminished in number in our dilutions.

For the sake of argument, let us assume that these distances do not interfere with the action of molecules upon each other, even if the whole drops of original substance could be expanded

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to fill continuous space. Still, as only a fraction of it is thus expanded, the distances do not come into play as do the walls of vials, which if they contain anything after the 12th or 13th attenuation, do so only by accident.

Whoever will take the trouble to form in his mind a conception of what is actually going on, in making dilutions by means of the centesimal scale, will perceive that the chances of retaining fractional parts (molecules) of original matter, diminish at the rate of one hundred divided by one hundred many times, thus soon lessening the chances by millions.

In the 11th dilution, as has been shown, according to the molecular constitution of matter, there can be but few left, and these, if still present, will have been separated by distances, which would be proportionate to the whole mass of alcohol or water required to attenuate the entire drop.

What these distances would be has been calculated many times, and is more tedious than difficult. Dr. Schimko also furnishes us with an idea of these distances. He calculates that in order to attenuate a drop to the 30th attenuation, it would require a globe of alcohol or water of thirty-six billions of miles in diameter, or 1,760,000 times the distance of the sun from the earth. Light travelling 41,000 miles in a second, and reaching the earth from the sun in seven seconds, would require twenty-eight years in order to traverse the diameter of such a mass of water or alcohol. Hence one drop of this enormous mass would contain precisely the quantity of medicinal substance which is contained in one drop of the 30th.

It will be easily understood that at the 11th decimal dilution, the limit of conceivable minuteness has been transcended; for to us one-third of the above enormous distance is already incomprehensible.

Von Grauvogl has demonstrated that, according to the investigations of Professor Jolly, in solutions of certain salts, molecular contraction takes place to such an extent as to show that molecular attraction is exerted through great distances of space, notwithstanding enormous preponderance of the proportion of the dissolving medium to the substance dissolved. Applying this to the 30th dilution, he claims that Hahnemann's arithmet-

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ical statement, as to the quantity of original substance, contained in a fractional part (one drop) of the 30th, cannot be correct, and that it must greatly exceed the actual amount.

When we further consider the enormous distances by which we actually separate molecules, and separate them by walls of vials, Von Grauvogl's conclusion, though of weight, does not refute the simple arithmetical calculation by which we are accustomed to estimate the quantitative contents of attenuations.

LIMITS OF THE DIVISIBILITY OF MATTER.

The preceding statement is not repeated here to show the futility of Hahnemann's ingenious method of dilution and potentiation; for it was never necessary to attenuate a whole drop to the 30th, and consequently thirty little vials and about three thousand drops of alcohol would accomplish it before our eyes.

Neither would there be any objection, were matter infinitely divisible, as was properly assumed at Hahnemann's time. But the course of modern researches, with its manifold revelations, points so strongly and unmistakably to the non-homogeneousness of matter, and to its molecular constitution, that we should pause. For the present we have no alternative but to accept that position of our state of knowledge.

Were matter infinitely divisible, all mathematical calculations as to transcendent minuteness of particles, attained by attenuation, would be deprived of much force, let the particles attained by attenuation be ever so small. The septillionth part of the mass of the sun would be no larger than the three-hundred-and-thirty-three-thousandth part of a millet-seed, and the septillionth part of a grain would be outside of all possible conception.

If matter is inconceivably and infinitely divisible, such reasoning would furnish no potent argument against the process of attenuation. But if matter *is* limited in divisibility to measurable molecules and atoms, we should say that any further attempts at attenuation were entirely futile and the effects illusory.

While we require only a few ounces of alcohol or water to reach the 30th attenuation, the calculation of the inconceivable minuteness of a particle of medicinal matter which would be contained in a drop is nevertheless true, and exceeds the dimensions

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of molecules by enormous figures, comparable only to the extreme distances and magnitude of heavenly bodies.

To reach such almost transcendental distances and dimensions it is not necessary to cite the 30th centesimal attenuation. Take only the figure known as a quadrillion, or the figure 1 followed by 24 ciphers (10^{24}). How great a volume of water is formed by a quadrillion of drops counting four drops to a cubic line? The answer is: 7017 cubic geographical miles, or 35,085 cubic English miles.*

The fraction of a drop or grain diluted to the 12th attenuation would then be a drop divided by the 35,085 English cubic miles of water or alcohol.

This is true, and cannot be destroyed by the argument that only a few ounces of alcohol and a few vials are needed. The simplicity of this argument, coupled with the vastness of progressive multiplication by the power of one hundred, leads beyond the conception of the mind, which clings only to the few ounces of visible vehicle contained in two or three dozens of little vials.

We have been treating of the molecular constitution of matter as related to the principle of attenuation. But, as the molecular theory involves the idea of the divisibility of molecules, its relation to our method of attenuation deserves notice here. Chemistry has turned the molecular theory to practical account, and by its demonstrable divisibility of molecules into atoms has remodelled chemical definitions throughout. Accordingly molecules now mean compound substances; and elementary molecules which, when divided into elementary constituents, separate into atoms.†

The point which we are to consider is that we are not aiming to split molecules into atoms, because, to the best known and accepted axioms of chemistry, belongs the fact *that a molecule of compound matter broken into atoms is no longer the original substance.* A molecule of salt, of one atom of Chlorine and one

* Kriess Arithmetic.

† See Modern Chemistry, and also Ad. Wurtz's Lectures, quoted above; these furnish very clear accounts of the present state of chemical science, based on the atomic theory.

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atom of Sodium, breaks into these constituents, if broken at all; the same applies to all compound bodies. We use in our dilution only soluble bodies; these soluble bodies are *compounds*. When we have attained by attenuation the limit of their molecular constitution they cease to be what they were, *e.g.*, salt, Arsenious acid, or Belladonna, etc., in tincture; hence we should cease to attempt to subdivide them farther.

For only one of two conditions can possibly occur; either they are no longer what the notation in the label would imply, or not having been subdivided into atoms, their molecules have become fewer and fewer in number, till at length at or about the 11th centesimal they cease to be present altogether. Chemistry, however, teaches that molecules consist of atoms, varying from two to two hundred and ten; the hydrogen molecules being taken as the standard, consist of two atoms (microcriths) of hydrogen.*

Now, even if it were admitted that molecules could be separated into their atoms by trituration, succussion, and dilution, the number of molecules contained in a drop multiplied by two hundred would not be equal to two degrees of potentiation by one hundred. Multiplied by a million it would only place the limit at the 13th attenuation or potency, instead of the 10th, which we have found to be the limit in the light of molecular science.

RELATIVE RELIABILITY OF DATA OF MOLECULAR SCIENCE.

It becomes, of course, a question how far the present state of knowledge concerning the molecular constitution of matter is based upon actual facts, or at least upon undisputed theories. Let us hear what the authorities above quoted have to say.

Maxwell has clearly defined the degrees of reliability of the various stages to which physical tests and mathematical calculations, as based upon the laws of Avogadro, Boyle, etc., have led. In the first rank are placed what is known of the relative masses of molecules, of different gases, and their velocities in meters per second, as obtained from pressure and from the density of gases.

In the second rank stand the relative size of molecules of dif-

* New Chemistry.

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ferent gases, the length of their mean paths, and the number of collisions per second, deduced from experiments on the three kinds of diffusion. Their received values are rough approximations.

In the third rank stands the absolute mass of the molecule. Its absolute diameter and the number of molecules in a cubic centimeter are not precisely known nor even approximately conjectured. But we know the relative masses of different molecules with great accuracy, and we know their relative diameter approximately. From these we can deduce the relative densities of the molecules themselves. So far we are on firm ground.

In the application made of this conclusion to our method of attenuation and potentiation sufficient and ample allowance should be and has been made for approximate calculations, and even conjectures with regard to the absolute number of molecules in a given volume.

EXTREME ATTENUATION, OR "HIGH POTENCIES," SUPPORTED BY SPIRITISTIC REFLECTIONS.

Hahnemann himself, in the last edition of the *Organon*, and later, in the last edition of *Chronic Diseases* (vol. v, 1838), insisted that there is a distinction to be made between dilutions and potencies, or dynamizations. He places the limit of dilution just where taste and color of any substance cease.

Dynamizations are produced not only by progressive dilution, but by increased force and by the number of strokes or concussions employed. In this way, he says, we already obtain in the 50th potency medicines of the most penetrating efficacy.

Hahnemann does not distinctly state it as his conviction that matter ceases to be present at the limit of taste and color, but maintains that the latent medicinal virtues of drugs are developed in what he calls dynamization, or potencies.

But it is certain that he held the opinion that the latent properties of drugs were developed independently of the diluted material substance, for he insists that the name of dilution should no longer be applied to potencies where that latent power is made to act in a spiritlike manner upon life; that is, upon the sensitive irritable fibre. While Hahnemann's idea of the subject does

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not absolutely preclude the progressive divisibility of substance, based on the possible infinite divisibility of matter, yet those who came after him abandoned this opinion, and unequivocally substituted a spiritual agency in the place of simple material attenuation. As far back as vol. x of the *Algem. Hom. Zeitung*,* "dynamopathy" and "Hahnemannism" were proposed as substitutes for the name homœopathy. The anonymous author was probably Dr. Hering, for he sought to substitute a newly awakened agent, a new fundamental force, which he supposed existed between the original substance and the vehicle. This he called "Hahnemannism," from admiration of Hahnemann, who still hesitated to express this opinion unequivocally in print. Hering's idea was based on the assumption that atoms of one being could impart their character to those of another; and this power was supposed to take an intermediate position between galvanism and mesmerism. Glass and cork were supposed to isolate it quite as well as they do electricity, etc.†

Such ideas as these harmonized with the previous inventions of Korsakoff, and were founded upon them; and it was from these same inventions that arose the process of contact-potencies.

According to this theory a hogshead of water could be made to possess medicinal virtues by contact with a pellet of the 30th. Hahnemann, however, had declared such medication to be impossible, because such a mass could not be stirred or shaken.

My object here is not to give a history of the theory of potentiation, but merely to show its origin and import. The basis of material attenuation was given up, and the theory of high potencies was based on the assumption of the spiritual or of some disembodied agency. While in Germany less and less was heard of them after the great revolution of 1848, in this country an enthusiastic party arose in their favor, awakening the controversy anew.

In order, then, to have a firm basis for potentiation, and particularly for high potencies, the upholders of such a dogma must depend upon a belief in a spiritlike power. And to develop

* Kleinert, History of Homœopathy.

† Kleinert, History of Homœopathy, from Archiv, vol. 15, No. 1.

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such a power would require at least some machine adapted to the force of potentizing machines, to which it has been subjected lately.

Arthur Lutze, in Koethen, claimed a much shorter method than this; he simply imbued his doses with animal magnetism. He acquired an immense practice, accumulated wealth, and edited a new edition of the *Organon*, which he enriched with contributions setting forth his discovery.

These doctrines are accepted by some of the followers of Hahnemann, but the majority reject them, except so far as the presence of matter is admitted. No one, except potency-makers, ever attempted to determine where the lower potencies end and where the higher begin; such a distinction is perfectly arbitrary.

Among those who incline, by belief or experience, to the so-called high potencies, there are many who never sought to account for their stability. They never knew or cared to know that they were based openly and avowedly on spiritual belief, and upon the open disavowal of material influence; it was with many faith in the pretentious name of "high potency."

There are many, on the other hand, among those inclined to the so-called low potencies who can state no distinct reason why they prefer them, except by experience and belief. Those who cared to have reasons for their actions surmised, or knew that there was a limit somewhere to the divisibility of matter, and while that limit was uncertain they preferred to remain on the side of reasonable safety, within the domain of the material effects of substances.

Such are the well-known differences of opinion—for they were neither more nor less—from Hahnemann's time up to the present. I have sketched them briefly without voluminous quotations to support them. To do so would be like proving by quotations that the sun rises and sets. The differences of opinion exist; upon them are based different parties of our school, and I believe that I have not done them injustice by overstatement.

In view of these facts, and in view of the acknowledged abandonment of the material principle, and the avowed acceptance of a spiritlike principle capable of being potentized and propagated in the potencies in contradistinction to dilutions, it was unneces-

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sary to adduce, as I have done, the evidence in illustration of the grained and molecular constitution of matter. The spiritual wing of our school will find no hesitation in admitting it, for it neither militates against nor supports their belief.

On the other hand, physicians, of whatever religious views, who, in their dealings with the material world, prefer to remain on the side of material influences, and who would not knowingly push their dilutions to that degree where all material influences must cease, should strive to know where that limit is.

It was for their sake, and also to contribute something towards the knowledge of this limit of divisibility, that I have given a brief sketch of the progress of molecular science. Those able workers in that field labored quite independently of, and without regard to, the bearing which their results might have upon the method of diluting or attenuating medicines.

By again referring to their figures it will be readily seen that matter is all but infinitely divisible. A molecule, though transcendently small to the perception of our ordinary minds, is nevertheless measurable, weighable, and its motions calculable and perceptible to skilled minds.

CONCLUSIONS BASED ON THE PRESUMPTIVE CORRECTNESS OF MOLECULAR SCIENCE.

The conclusions are few and simple. Instead of an infinite scale of attenuations let us have a standard, like weights and measures, which we can teach to learners, that they may not be divided into sects injurious to our cause. Let us declare the 11th centesimal as quite high enough. Let us also abolish the absurd method of endeavoring to dissolve insoluble substances. Still, if any one prefers to continue his triturations and dilutions higher, no one need object. But never let the potency enter into the definition of homœopathist.

To those whose office it is to teach, certain standards of value and measure are indispensable. If we abandon the substratum of matter, we are launched at once into metaphysical speculations, and plunge into spiritual and spiritistic speculations, from which may our school be saved! It will thrive just in proportion to its

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fealty to the known principles governing matter. It will fail, as a science, when it seeks support in the spirit world. Objections to these propositions are and will be raised by demanding proofs that higher attenuations than the 11th are incapable of curing. In my last report to this bureau I stated the ground upon which alone the proof of a cure can be established, namely, upon a system of proofs and counter proofs, according to which, in a given case of cure, the result can or cannot be attributed to the medicine.

I have also freely stated that the same applies to the low attenuations and triturations. I can only sketch out my line of argument.

1. Aside from all light which science has of late thrown upon the constitution of matter, "experience" is and always was the only guide in the practice of medicine, in all schools and with all potencies.

2. No decision will be possible in regard to the merits of various potencies until "experience" includes numerous and accurate statistics, obtained from hospitals and private practice. Experience must be based on statistics which show the negative as well as the positive results of treatment. Hitherto only favorable cases have been reported.

3. Until then the assertion of individuals who exclude negative results, and the assertion of superiority of skill and success, is entirely without force.

4. The chances of efficacy of a drug preparation are absolutely on the side of the scale attained before the limit of material presence is reached.

5. Rigid and persevering research and inquiry were the foundation of the new school, and by them only can it be maintained.

These inquiries were undertaken from a desire to lay a safer foundation for the estimation of cures upon the homœopathic rule or law, and thereby to do better than we are all, without distinction, able to do now. Bold and over-enthusiastic assertions of superiority, based on belief in spiritual influences, carry before them the young men of the profession, but are without weight in the light of calm reason.

"*Aude sapere,*" said Hahnemann, not "*aude credere.*" "Dare to know," not "dare to believe."

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XVIII.

ON THE PROOF OF THE PRESENCE OF MEDICINAL POWER IN ATTENUATIONS ABOVE THE SIXTH DECIMAL,

FROM THE STANDPOINT OF THE SCIENTIST.

By Lewis Sherman, M.D., Milwaukee.

In regard to the question, whether solution of the so-called insoluble substances is really accomplished by the Hahnemannian process of attenuation, opinions are divided.

There is abundant reason to believe that no substance is absolutely or entirely insoluble in water and alcohol.

Water and many other substances in the *solid*, as well as in the liquid state, are known to give off vapors at ordinary temperatures. There is a constant tendency of all matter to assume the gaseous state. The higher the temperature the more rapidly does this process go on. The boiling-point of a liquid is by no means the lowest temperature at which it gives off vapor; it is rather that degree of heat (molecular activity) at which the expansive force of the vapor is sufficient to overbalance the pressure at the surface of the liquid. As the pressure diminishes the boiling-point becomes lower. Water will boil at its freezing point if all pressure be removed from its surface. Ice gives off vapor of water with appreciable rapidity when the temperature is many degrees below the freezing-point. Mercury is known to give off copious vapors in the liquid state. Even gold rapidly assumes the gaseous form if the temperature is raised high enough. In the liquid state its vapors are perceptible, and analogy would add to the conclusion that the process is not entirely stopped

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when it assumes the solid form. We are by this reasoning led to believe that every substance, solid as well as liquid, is surrounded by an atmosphere of its own vapor. Water and alcohol readily hold vapors in solution. Hence all substances may be regarded as soluble in water and alcohol.

The state of subdivision, produced by trituration, promotes rapid solution by virtue of the extent of surface exposed, and also on account of the fact that fine particles are held in suspension in these liquids for a considerable time.

I do not affirm that all of the medicinal particles of the so-called insoluble substances in their 3d centesimal trituration are dissolved in the 4th attenuation made by Hahnemann's process. I only assert my belief, with reasons for this belief, that some portion of the medicinal substance is dissolved. In most cases these will be coarse particles, which will fall to the bottom of the bottle in the 4th attenuation, and in all cases some particles will remain suspended in the liquid for an indefinite period. Although I believe that the lower Hahnemannian dilutions are solutions of the drugs they purport to contain, I am free to maintain that the process of solution destroys the pathogenetic and therapeutic properties of those drugs. My reasons for holding this last were stated in a paper read before this Society at its last previous meeting. A brief recapitulation may be allowed.

The specific poisonous properties of the insoluble substances depend upon their insolubility. The poisonous effects of lead, for instance are produced by the introduction of the carbonate of that metal; they are removed by administering a substance which renders the lead soluble, such as Iodide of potassium. The Iodine forms a soluble salt with the lead which is excreted by the kidneys. Large quantities of Acetate of lead may be swallowed without danger of lead poisoning, because this salt is soluble and removable by the excretory organs. The specific effects of the different insoluble poisons vary with the physical properties and conditions of those substances.

Metallic mercury in mass has very little effect on the human body. When subdivided into minute globules its great weight and smoothness render it the most active agent in the whole Materia Medica for the removal of passive congestions and plas-

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tic deposits in the tissues. Metallic mercury, metallic gold, and other insoluble substances in the form of solid particles are known to be taken into the circulation, and deposited in the tissues, causing disorganization or foreign growths. A globule of Mercury may be pictured rolling through an obstructed capillary, like a leaden ball through a long narrow tube, when a ball of some lighter material would only increase the obstruction. The effects of the mechanical action of insoluble particles introduced into the circulation may be as various as the physical properties of the particles. But these effects cannot be produced by the introduction of solutions of those substances, except in cases where the solutions are so concentrated as to form precipitates after they enter the body.

Does trituration promote the solution of gold?

The average diameter of the particles of precipitated gold is about $\frac{1}{30000}$ inch. (The particles of the phosphorus precipitate are somewhat smaller.) The weight of one such particle would be $\frac{1}{70000000000}$ grain.

Hence, there would be seventy such particles in one grain of the 9^{x} trituration.

A powerful microscope can only make visible at one view $\frac{1}{10000}$ of a grain of a trituration.

Hence, there would be in the 9^{x} trituration one particle to every 140 fields, provided the particles are not subdivided by the process of trituration. This agrees with the facts of observation.

The free surface in a grain of precipitated gold is about 245 square inches.

If the process of trituration subdivides the particles so that the free surface of gold in a grain of the 9^{x} trituration is at least as great as that in one grain of the crude, the average diameter of the particles would be $\frac{1}{300000000000}$ inch.

The weight of one of these particles would be

$$\frac{1}{70000000000000000000000000000000000000}$$ grain.

The smallest visible particle with the best microscope and the best illumination is $\frac{1}{8400000}$ inch in diameter.

A spherical particle of gold of this diameter weighs about $\frac{1}{3000000000000}$ grain.

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Hence, one of the particles in the 9^{x} trituration should be (if there is no decrease of free surface) $\frac{1}{7777777777777777777777777777}$, the size of the smallest particle visible under the microscope.

If the particles are so subdivided, they should cease to be visible between the *first* and the *second* decimal triturations. But particles of gold have been seen in the *second*, *third*, *fourth*, *fifth*, *sixth*, and even the *ninth* and *eleventh* decimal triturations; hence, the conclusion is irresistible that gold is not subdivided by trituration.

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XIX.

ON THE PROOFS OF THE PRESENCE OF MEDICINAL POWER IN ATTENUATIONS ABOVE THE SIXTH DECIMAL,

FROM THE STANDPOINT OF THE THERAPEUTIST.

By Lewis Sherman, M.D., Milwaukee.

Under this head I desire to say a few words in favor of the *test proposed by the Milwaukee Academy of Medicine.*

The proposition is briefly stated thus:

A vial of pure sugar pellets, moistened with the 30th Hahnemannian dilution of Aconite, and nine similar vials, moistened with pure alcohol, so as to make them resemble the test pellets, shall be given to the prover. The vials are to be numbered 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 The number given to the Aconite vial shall be unknown to the prover, and it shall be his task to determine which of the ten vials contains Aconite.

These preparations are to be put up with the greatest care, in the presence of the members of the *Milwaukee Academy of Medicine*, and then placed in the hands of an unprejudiced layman of unimpeachable honor, who shall number and dispense the vials as they are called for by the provers.

The provers must be physicians of acknowledged ability, who possess a good knowledge of the recorded symptomatology of Aconite, and who have faith in the efficacy of the 30th dilution.

If a hundred physicians engage in making the test and all, or nearly all, single out the Aconite pellets, the inference will be that the 30th dilution represents the medicinal properties of Aconite.

If only about ten out of the hundred succeed in the trial, the inference will be that the 30th dilution of Aconite possesses no medicinal properties, for, according to the laws of probabilities, about one in ten would guess right without making any trial.

Preparations of *Arsenicum album*, *Aurum metallicum*, *Carbo vegetabilis*, *Natrum muriaticum* and *Sulphur* in the 30th Hahnemannian dilution, made with the same precautions and care as this of *Aconitum*, shall be used as a

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test of the *therapeutic* powers of the 30th dilutions. In consideration of the inconvenience of experimenting on the sick, arising from popular prejudices, the number of vials of "unmedicated" pellets may be limited to one for each remedy, and the experiments tried mostly in chronic diseases. The real gain to the healing art, which will be accomplished by the establishment of the truth or falsity of the theory of "potentization," will amply compensate for the risk of delaying a few cures.

The experimenters must be physicians of acknowledged ability, who possess a good knowledge of the therapeutic indications of the remedies tried, and who profess faith in the efficacy of the 30th dilution. If in this trial there be about one hundred per cent. of successes, the inference will be that the 30th dilutions have curative powers. If there be only about fifty per cent. of successes, the inference will be that the 30th dilutions have no curative powers.

If those who advocate the use of these preparations refuse to participate in the experiment, the profession will have reason to suspect that they are insincere.

If the result of the test should be to prove that the 30th dilution of a drug can make the sick well or the well sick, then it must be acknowledged that in this a great discovery has been made in physics as well as in medicine, and the science and ingenuity of the civilized world will be set at work to find out the useful applications of the discovery.

If the result should be to prove that the 30th dilution has no such powers as it is claimed to have, then the medical profession has a right to demand that the symptoms supposed to have been produced by the 30th and higher dilutions be expunged from our Materia Medica, and that advocates of the potentization theory shall henceforth cease to prate their "cures" in medical journals and before medical societies which are avowedly devoted to the interests of science.

Report of a Committee appointed by the Milwaukee Academy of Medicine, for the Purpose of making Arrangements to Prepare a Scientific Test of the Efficacy of the 30th Hahnemannian Dilutions.

MR. PRESIDENT: Your committee have carefully considered the plan proposed in Dr. Lewis Sherman's paper for testing the efficacy of the 30th Hahnemannian dilution, and we are unanimously of the opinion that the test proposed in that paper is fair and honorable, and that the interests of science demand that it should be made.

We recommend,

That our society undertake to carry out the provisions of this test, and that to this end the essential features and the practical details of the test be given for publication as soon as practicable to every regular homœopathic periodical printed in the English language; and that translations of the same be sent to every known regular homœopathic periodical printed in foreign languages; and that all other appropriate and accessible means be employed to give the test publicity.

That the directions given by Hahnemann for the preparation of the 30th

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dilution be followed with the most scrupulous exactness; that the alcohol used be of the purest quality obtainable, and that to this end a quantity of the best so-called "homœopathic alcohol" be redistilled in glass for the purposes of this test.

That the Rev. George T. Ladd, of Milwaukee, be selected to number and dispense the vials of test-pellets as they are called for by the provers and experimenters; and that he give a solemn pledge that he will not, in any manner, reveal to any person which of the preparations coming from his hands have been medicated with the 30th dilution, until he shall have been called upon to do so by this society, and that he will use every means in his power to preserve the purity of the materials intrusted to his care, and to make the test fair and honorable.

That all provers and experimenters be required to send their reports to the secretary, Dr. Albert Schlœmilch, before the first day of December, 1879; and that the result be published in full about the first of January, 1880.

And finally, that this society appropriate a sufficient sum of money to defray the expenses of furnishing and delivering the test-pellets of Aconite to one hundred provers—these being selected from the first who apply—and that the other provers and experimenters be required to pay in advance to the secretary of the society the sum of thirty cents for each set of test-pellets sent them.

EUGENE F. STORKE, M.D.,
ROBERT MARTIN, M.D,
E. M. ROSENKRANS, M.D.,
JULIA FORD, M.D.,
ALBERT SCHLŒMILCH, M.D.,
G. C. MCDERMOTT, M.D.,
O. W. CARLSON, M.D.

MILWAUKEE, December 3d, 1878.

At a regular meeting of the Milwaukee Academy of Medicine, held April 1st, 1879, the following resolution was unanimously adopted:

Upon application by any professor in a medical college, or any other public advocate of the high potencies, the Academy will prepare and furnish the 30th Hahnemannian dilution of *any remedy* in common use, for the purpose, and in accordance with the terms heretofore published in the pamphlet, entitled *A Test of the Thirtieth Dilution.*

A. SCHLŒMILCH, M.D.,
Secretary.

April 21st, 1879.

The most important feature of this test is the removal of all bias from the minds of the experimenters. Whatever preponderance there may be in the selection of medicated pellets, it can-

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not be ascribed to the vanity, pride, prejudice, superstition, or love of gain, or any other selfish motive acting on the physicians who undertake the experiment. Hence, if the results should be favorable to the efficacy of the high dilutions, the evidence is incomparably superior to that obtained from men who are of necessity subjected to outside influence.

Men who desire to learn the truth in regard to the question of attenuation and potency will be ready to undertake this test; but men who have selfish motives for making it appear that the truth is on one side or the other of this question, will neither undertake the experiment nor be willing that others should do so.

Another noticeable feature of the test is that the medicinal preparations are made especially for the purpose of the test by a body of men representing *both sides* of the question, and then immediately put into the hands of a disinterested party. There is, therefore, no chance for collusion or for insinuations of trickery.

The method of preparation is that followed by Hahnemann, and by the most careful pharmaceutists of the present day. Thirty vials are used in the preparation of each remedy, and ten shakes are given to each vial. None of the shoddy methods of adventurous heretics are countenanced. The preparations are made with strictness as to method, and great care in regard to purity.

Another important feature is that the experiment is performed by *believers* in the potencies, who are, of course, most interested in the success of the demonstration. In making up the results none but men of acknowledged skill and ability will be counted. Ample time is given for every believer in the potencies to secure the aid of every sensitive subject of his acquaintance. No failures then can be ascribed to lack of skill or opportunity. Each experimenter, moreover, is allowed to choose the particular remedies with which he is best acquainted, and from which he has seen the most marked results in the 30th dilution.

The remedies preferred by the Academy are *Aconitum, Arsenicum, Aurum, Carbo vegetabilis, Natrum muriaticum, Sulphur.* We think that this list includes the best known and the most active remedies in the Materia Medica, and gives an assortment of those best adapted to both acute and chronic cases, of those which

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are poisonous, and those which are non-poisonous in the crude state and lower attenuations, and of those which are soluble and those which are insoluble. If any believer of acknowledged skill and ability thinks he can do better with some other medicine, the Academy are ready to furnish that medicine.

In the trials on the sick there is one vial of medicine and one of blank pills, and the experiments are recommended to be tried mostly in chronic cases.

On the ground of morality we believe this experiment is not only entirely justifiable, but actually demanded. If there is truth in the doctrine of potencies it is important that the medical profession and the world at large should know it, for many valuable lives are lost by the unnecessary use of large doses of medicine. If there is no truth in the doctrine it is important that the medical profession and the world at large should know it, for many valuable lives are lost by the neglect of this great discovery.

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APPENDIX.

DISCUSSION.

THIRD DAY—MORNING SESSION.

Answers to the Questions on "Drug Attenuation in Homœopathic Therapeutics," by Ad. Lippe, M.D., Philadelphia.

Question 1. History of Drug Attenuation in Homœopathic Practice, up to the Death of Hahnemann; with a Statement of its Objects and Methods.

Answer. A true and fully reliable history can only be made up from facts which cannot possibly be contradicted, and such facts can only be established through *documentary evidence.* Hearsay testimony is *no evidence;* documentary evidence cannot be contradicted. We find Hahnemann an advocate of the 30th potency in all his writings. The first remedy, by him, published in his *Materia Medica Pura*, third edition, 1830, was Belladonna; he distinctly recommends, as a suitable and sufficient dose to cure, the smallest part of a drop of the 30th potency. Hahnemann says, on page 12 (Preface to Belladonna): "Taught by hundreds of experiments on the sick, I found myself compelled, during the last eight or ten years, to come down to the decillionth (30) potency, and I find the smallest part of a drop (the one thousandth part of a drop) just sufficient to accomplish the healing object." Hahnemann's objects and methods were, first to so diminish the quantity and attenuate the drug till the curative object was obtained without the painful and even injurious effects of large doses of the drug, homœopathically indicated, when administered in such doses as will frequently cause much unnecessary sufferings, and even cause injuries, because given in too large a dose. His method he has frequently described, and did so again in his preface to Belladonna. He there repeats what he had described before as his mode of attenuating crude drugs for better clinical uses. He says, there, that he "takes as a unit

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the juice of the plant mixed in equal parts with two drops of alcohol, and drops this into a vial filled with 99 drops of alcohol, shakes this vial downwards twice, which constitutes the hundredth part of a dilution; of it another drop is mixed with 99 drops of alcohol in a clean new vial, and is shaken in like manner, which constitutes the 10,000th dilution, and another drop of it is again shaken with 99 drops of alcohol, which constitutes the 1,000,000th dilution. The potentization is so continued through 30 vials, and thereby we obtain the decillionth potency; with this preparation the homœopathist cures all such cases as are curable with Belladonna. He further says, that this small dose is all-sufficient in the most acute diseases, and when given in a chronic disease this very small dose will act for three weeks and longer.

Question 2. History of Drug Attenuation in Homœopathic Practice, since the time of Hahnemann; with a Statement of its Objects and Methods, with Especial Reference to Variations from those Approved by Hahnemann.

Answer. The first known drug attenuations differing from Hahnemann's method were made by Korsakoff during Hahnemann's lifetime, without his objections to this new method, which consisted principally in making "contact potencies;" that is, after reaching, say the 30th potency of Hahnemann's, he mixed a large number of unmedicated pellets with a few medicated dry pellets, shook them very thoroughly, and in this manner he continued to make his (contact) higher potencies. Next came Jehnichen, who produced the 200th and higher potencies; he even produced the 40,000th of Arsenicum. All we know positively of his *modus operandi* is, that he used much larger potency vials, a larger fluid vehicle, and a larger force by his powerful arm than Hahnemann did.

In 1867 the American Institute of Homœopathy, finding that the preparation of drug attenuation was carried on to a much higher degree than had been done by Hahnemann, instituted some inquiries, and addressed itself to Dr. B. Fincke, who evaded a positive answer. This statement of facts was published and the question was agitated in the third volume of the *Hahnemannian Monthly*, page 214. This brought a reply from an eminent lawyer in Brooklyn, and in the same volume of the *Hahnemannian Monthly*, page 385, I was requested to shed some light on the mooted question; this was done in various papers, to be found in the same volumes of that journal, pages 385, 419, 497. The student of the history of drug attenuation will there find "*documentary evidence*" to show who was, and still is, the custodian of the statements made to him by Jehnichen respecting the preparations of his high potencies; it will also be seen that said cus-

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todian of the secret was authorized by Jehnichen to divulge and promulgate it "*when the right time came.*" Like Jehnichen, Dr. B. Fincke, too, who produced fluction-potencies and much higher drug attenuations than any one before, kept his secret. In 1859 the late Dr. von Bœnninghausen caused Lehrmann, who was a trusted pharmaceutist, to prepare the 200th potency of 200 medicines after Hahnemann's method. These various preparations were well tested by experts and their testimony laid before the profession. The fundamental law of demand and supply became evidently the cause of a multiplying preparation of high potencies. There was such a demand for them that we find the late Dr. Carroll Dunham, by the aid of Dr. H. M. Smith, in New York, prepared another set of the 200th potency, much more shaken than were those of Lehrmann, who gave each vial only two downward shakes, but used for each potency a new vial and alcohol for a vehicle. Then came the preparations of Boericke & Tafel, of Dr. Samuel Swan, and of Dr. Thomas Skinner. There was no secrecy about these latter preparations; the methods used were published in our journals.

The object the various drug attenuators had in view was undoubtedly a desire to find a potency which would no longer show the presence of medicinal virtue, would be administered to the sick without causing any curative or other effect. The experiments made with Jehnichen's high potencies showed that the higher potencies possessed proportionately greater curative powers than the lower potencies, and when drug attenuation was carried still farther, it was only to prove the correctness of the former observations.

Question 3. The Means Employed in Drug Attenuation; what they Should Be, and the Danger of Impurity.

Answer. The question has really been answered before. What they should be? Why, they should be so prepared as to produce the most efficacious medicines, which they cannot do if impurities are allowed to become part of the preparation. Nothing but the experiment can decide whether an attenuated drug is pure and the attenuation useful in curing such cases of sickness as fully correspond with its sphere of action.

Question 4. The Limits of Drug Attenuation, or Proof of Drug Presence in Attenuations above the Third Decimal; from the Standpoint of the Scientist.

Answer. No doubt the question truly means, from the standpoint of the materialist. The scientist stands for "materialistic investigator." Whether any particles of a drug can be detected in a preparation above the 3d decimal is by no means settling the grave question as to the development of the curative powers

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of drugs by potentization. The microscope has detected particles of triturated metals far above the 3d decimal, and there are now investigations in progress showing that by the solar spectroscope much higher triturations show discernible color lines. Such questions (as No. 4) have been asked by the opponents to homœopathy time and again, and we hope that some of our *scientists* will make it a point to show how far these investigations have gone; and how far they show the presence of drug particles in drug attenuations will show how far materialism finds itself eliminated by the spectral analysis. And we may just here be permitted to call attention to a very becoming answer to this question, which we find in the *Hahnemannian Monthly*, page 198, by S. A. Jones, M.D. It reads thus: "Now why may not a homœopathic therapeutist, as well as an old-school physiologist, apply the *physiological test* to determine the presence of a poison in quantity too minute for chemical test? And why oblige the homœopathic therapeutist, when he has successfully applied the physiological test, to demonstrate the condition of the 'original substance' in the thing tested; why insist that he must show whether the 'original substance' be in minute subdivision or in solution? Why deny the existence of some of the 'original substance' when, though the microscopic test and the spectroscopic test fail, the physiological test gives affirmative evidence? Is the marvellous human body clumsier than the microscope, less sensitive than the spectroscope?" Professor S. A. Jones, in his laudable efforts to enlighten Professor Conrad Wesselhœft, who had unfortunately fallen into a Carbo veg. demonstration, might as well have told him that the provings of Carbo veg. were made with the 3d and higher triturations, the crude substance and the first two triturations having produced no effect on the provers.

Question 5. The Limits of Drug Attenuation, or Proofs of the Presence of Medicinal Power in Attenuations above the 6th Decimal, from the Standpoint of the Therapeutist.

Answer. The limits of drug attenuation are *unknown!* There has not yet been produced a single drug attenuation which, subjected to the test of the therapeutist, has not shown strong, nay, so far, steadily increasing medicinal and curative powers. Proofs of the presence of medicinal power in attenuations above the 6th decimal are in the possession of the medical profession by the thousands; they are on record in Hahnemann's *Materia Medica Pura*, in the medical journals published in the last *fifty* years. It is, therefore, a settled question, settled forever, and the very admission of the presence of medicinal power in the 6th decimal attenuation is implicitly an acknowledgment of the cor-

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rectness and admissibility of the theory of potentization; or does there exist anywhere a "nothing?" Can any substance come to nothing in any way; or, by division, be divided and finally come to be *nothing?*

The idea of nothing is absolutely the negation of all ideas; so is the negation of the existence of the substance, in an ever-so-much divided substance, a negation of the existence of the substance itself before its division.

The presence of medicinal power of any undivided or crude substance can only be ascertained by the clinical experiment; in like manner can the presence of medicinal power in any attenuation only be ascertained by the clinical experiment.

The testimony, so abundantly offered, positively *affirming* the curative power of highly attenuated medicines, can never be set aside save by a more abundant testimony showing exactly the contrary. But, the admissibility of such testimony would very much depend on the qualifications of the witnesses. If a witness testifies that in his hands potencies above the 6th decimal have not shown any medicinal (curative) powers, he will have to show that he carefully selected his remedy and that he skilfully applied it. Till that is done fairly and honestly, the testimony as we find it recorded for more than fifty years will stand unshaken, and be final.

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XVI.

MEANS EMPLOYED IN DRUG ATTENUATION.

By M. J. Rhees, M.D., Wheeling, W. Va.

Some facts in regard to drug attenuation, and especially to that important part which is accomplished by trituration, have forced themselves so strongly on my attention that I desire to lay them before you.

Accompanying this paper you will find a package of powders, each bearing a number, for my own convenience of reference, and each, except the last two (Nos. 7 and 8), claiming to be the 2d decimal trituration of Kali bichromicum.

Nearly four years ago, having a case of malignant diphtheria under treatment, I sent for one of the most eminent homœopathic physicians of Boston, a professor in the Medical Department of Boston University, to meet me in consultation. (I was then living near Boston.) He advised Kali bich. 2^x, and Hepar s. c. 2^x, to be given alternately. As I had very seldom had occasion to use those preparations, I had none on hand, and the doctor promised to send me some as soon as he returned to Boston. He did so, and powder No. 1 is a specimen of the Kali bich. received from him, poured out of the very vial in which it came to me. When I looked at it, I was astonished that any physician could be willing to accept it or use it as a trituration of any degree; but thinking it might have been prepared and sent by one of the doctor's students without his supervision, I gave very little more thought to it.

Last December I removed to this city, and have since come into possession of a two-ounce vial of stuff marked Kali bich. 2^x,

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which I know had been extensively used by a physician of some note in the West, who was formerly a professor in a Western homœopathic college. Powder No. 2 is a specimen of this preparation.

In the course of a professional life of a third of a century, I had made too many triturations, myself, not to be able to see at a glance that these were in no sense *triturations*. I therefore determined to find out if possible, whether any reputable homœopathic pharmacy sent out such mixtures as triturations, and knowing with which of the pharmacies the last-mentioned physician usually dealt, I wrote to that one (a prominent Western pharmacy), and also to the most prominent pharmacies in the Eastern and Middle States, ordering from each, one drachm of the 2d decimal trituration of Kali bich. Powders 3, 4, and 5 are specimens of what I received from each. Nos. 6, 7, and 8 are triturations made by myself.

It will be perceived that even in No. 5, which is the best obtained from any of the pharmacies, great "chunks" (to use the expression of one of our eminent microscopists) of the crude drug are clearly visible to the unaided eye. Larger and more numerous "chunks" are seen in each of the others.

It is not possible that any of these preparations were made according to Hahnemann's rules, or with any desire to accomplish the true purpose of trituration. There are two objects to be attained in the trituration of homœopathic medicines. The first is, complete subdivision of the drug or crude substance and its intimate mechanical admixture with the vehicle; the second is, DYNAMIZATION. The second and most important object cannot be attained unless the first is accomplished. But what constitutes complete subdivision of the drug? Can the subdivision reached in five of these specimens be called complete or even approximately so? I think not. They each, from the crudest mixture to the best machine-made trituration, contain masses of particles large enough to be seen without a magnifying glass. Perhaps we cannot reach absolutely complete subdivision down to the ultimate molecules; but we can certainly come nearer than have these pharmacists. I think there ought to be no particle of the crude substance large enough to be seen by the microscope in the

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2d decimal or 1st centesimal triturations, if it has been properly comminuted. If the 1st trituration has been properly performed and sufficiently prolonged, the molecules of the drug ought to be separated and equally distributed among the molecules of sugar of milk, and even if the ultimate molecules cannot be entirely separated, the mass can be, and ought to be, proportionately and equally divided. I think there may be in each of these specimens of triturations I send you, some separate molecules of Kali bich.; but there are also, in at least five of them, masses containing millions and billions of molecules in their crystallized agglomeration intact. Having escaped subdivision in the 1st decimal trituration, these masses have also passed through the 2ˣ. If any mass of molecules passes the 1st trituration, whether that be a decimal or centesimal trituration, without subdivision, its chances for escaping in the second and all subsequent triturations are multiplied. For this reason I am not surprised that Professor S. A. Jones found gold visible under the microscope in the 9ˣ. He found a particle or particles, or more properly, masses of molecules which had accidentally escaped comminution in all previous triturations, through imperfection in the manipulation, and he may happen to find them in the 30ˣ from the same cause. But if the 1st and 2d triturations had been properly made, he could not have found visible particles in the 9ˣ, if even in the 3ˣ or 4.

If in the case of any drug, the 1st trituration is not carefully and properly made, and the exact proportion of molecules preserved throughout every part of the trituration, it is self-evident that no subsequent trituration or attenuation can be correct; therefore, it is of the utmost importance that the 1st trituration of every drug be made with the most perfect exactitude. The pharmacists may say, and truly, that in the large quantities in which they prepare these triturations, it is impossible to make so complete a comminution and perfect mechanical admixture, as when they are made in smaller quantities. But if they cannot be made properly in large quantities, and by machines, they ought to be made in small quantities, and by hand. This is work that requires brains. Let us by all means have true and scientifically correct preparatious of our medicines, whatever it

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costs. Whether the molecular theory is true, or matter is infinitely divisible; whether our medicines are dynamized, and their medicinal power is communicated to the vehicle, or not; whether we give the low triturations, or the 30th centesimal, or the 200th centesimal, let us have our 1st trituration and 1st dilution made as if upon *them* human life and all its interests depended.

Four facts in regard to trituration have been considered in the preceding pages. The first is: That some physicians, claiming to be homœopathists, and holding positions of honor and responsibility in the profession, even in classical Boston, with her supercilious assumption of scientific supremacy, as well as in the somewhat less pretentious West, are content to use preparations in the treatment of disease, which are in no sense homœopathic triturations, but are absurdly crude mixtures. The second is that our oldest and most reliable pharmacies dispense preparations under the name of triturations, which, though better than the crude mixtures considered above, are very far from being perfect, even in the case of Kali bichr., which is much more easily manipulated than many others. The third fact, as shown by the samples I send you, is that, triturations dispensed by the different pharmacies, but bearing the same name and number, do not agree in color; thereby showing a difference in proportion of crude drug to sugar of milk. The fourth fact, as proved to you by my own preparations, is that far better triturations can be made without difficulty by means of a common mortar and pestle, than are made by the machines of the pharmacies. Whether the machines, when under the control of conscience and brains *can* make thorough triturations, or not, I do not know; but I do know that we have the proof before us that they *do not* make them in all cases.

To preserve the purity and identity of our remedies a separate mortar, pestle, and spatula should be used for each drug. In some cases the horn or ivory spatula will be indispensable; but it is a question worth considering whether, in most instances, an extremely hard and sharp steel spatula would not be better. It would be least likely to lose any portion of its substance in scraping the smooth surface of mortar or pestle, and is, in my opinion, the best instrument for the purpose, except when a chemical sub-

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stance which could attack and combine with the steel, is being triturated. The mortars and pestles should be thoroughly washed and scoured with Bristol brick or white sand, and washed again in hot water and dried by heat after every trituration. As, often, the atmosphere surrounding the operator becomes charged with impalpable and invisible particles of the medicine, every drug ought to be triturated in a small room devoted to this purpose. The room should have a hard floor and no carpets or hangings of any kind about it. It should be heated by steam, have its own water supply, and be kept scrupulously clean. One of the greatest difficulties in making triturations is the great liability of dust and impurities floating in the air, to get into the mortar and become mixed with the trituration. To guard against this the room should be small and otherwise as above described, and the house should be in the country surrounded by meadows or lawns, where a pure atmosphere is possible. The impossibility of making a pure trituration in such a city as this or Pittsburg is very evident to any one who has ever tried it; it is bound to be contaminated with carbon in the shape of lampblack. But *any* city should be avoided. The proprietor of such an establishment should be a well-bred and experienced physician, of mechanical tastes, and he ought to make every 1st trituration with his own hands. He ought also to have the whole establishment under his own direct supervision. With such a factory of triturations in competent hands we might hope for exactness and purity in the whole scale of our remedies.

Allow me to call attention to the strange indifference of some of our most eminent men to the mode of preparation of the remedies they use. On one occasion, when discussing the high potencies with one of the most distinguished homœopathic physicians in the United States, and trying to show him the ridiculous absurdity of their mode of preparation (that is of Swan's thousandth and millionth potencies), he said to me, "My dear sir, I don't care what they are, or how they are made, so long as they do what I want them to. I cure my patients with them, and that is enough for me." But ought this to be enough for a scientific man? Is it not incumbent upon us all to know with what we are risking the lives of our patients? If we believe that

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the 40,000th of Lycopodium will cure a certain case of diphtheria, and that nothing but the 40,000th will do it, as some of these gentlemen do, are we, under any circumstances, excusable in giving a preparation, which (as I have conclusively shown elsewhere) may be the 10th, or may be the 3d centesimal, and may be nothing but water, but can by no possibility be what it claims to be? How can these men quiet their consciences in such indifference? and how can we hope ever to have conscientious and exact pharmacists while the profession is itself apathetic and unconcerned as to the quality of the means made use of for the cure of suffering humanity?

DR. T. F. ALLEN: I believe that I am not a fanatic on high potencies, as I have long been known as a low potency man. I really was never above the 200th, though I have occasionally given the 1000th. As a scientific investigator, which I try to be, I would like to see settled the question regarding the efficacy of the 30th potency.

I have settled it in my mind long ago, and would like to see it settled by this body; the only way is, not to write a long article in a great many words, but to set to work and make experiments, and see if we cannot get at the truth of the matter in some way. We may read papers for a week and not be any nearer the truth than we were before. I think the propositions of Dr. Potter and Dr. Sherman are right to the point. They propose to make a test of this matter. I do not consider that their proposition was put exactly in the proper way, but it is a step in the right direction, and I believe that is the only line on which this can be settled properly.

Now, those gentlemen who wish to give us some help can do so by giving us some vials, and letting us fill each of them with the 30th dilution, each of which dilution shall receive the 200th succussion. These half dozen remedies shall be put in the hands of some unbiassed member of this Institute, an honorable, upright man, and a vial of this shall be given to some person who is willing to undertake this trial; and I will say, gentlemen, that I would be perfectly willing to do it. You might give me one bottle of the 30th dilution of any of the six remedies, and I would pick out the right one. I would like to have the remedies run close together in their pathogeneses. Now you will have converted me if I cannot tell the name of the remedy, but if I tell you the name of the remedy, then you must, Messrs. Sherman and Potter, acknowledge the efficacy of the 30th dilution.

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Now that is fair. Well, having acknowledged that, next year, gentlemen, I will take you one step further, and compel you to acknowledge the superiority of the 30th dilution over the tincture of the 1st. (Great applause, and cries of Hear! Hear! Hear!)

DR. MORSE: I desire to ask one question of our President in regard to his paper. He has given us the ultimate divisibility of matter into molecules and atoms. I wish to ask, if he has got one atom of that matter, and if he puts that into water, whether it will not impregnate that water indefinitely? I want to know if we have any means of showing that it will not?

DR. CLARK, of New Bedford: I was very much pleased to hear Dr. Allen's statement. It is a very manly statement from his standpoint it strikes me. I am very glad the issue is taken in this way. I think it is high time, for the credit of ourselves as a scientific body, that we cease from speculations in regard to these matters and wordy talk, and commence upon some positive action by which we can govern ourselves, and decide these difficult questions. One thing more I would like to hear from Dr. Allen, and that is, what he got up for? He asks that when this report has been received, if he should determine the medicine which he is trying, that we shall acknowledge that the 30th is efficacious; and furthermore, he proposes another thing which I hope he may live to accomplish. Now I want to hear whether Dr. Allen, a year hence, proposes to acknowledge, in case he does not tell the remedy, that the 30th is not efficacious? (Applause.)

DR. LILIENTHAL, New York: There is said to be a little old book, which I suppose some of you have heard of; it is called the *New Testament;* it is not so new after all. It is an old book, but in that old book there is a chapter and a verse where it says there is a corporal body and a spiritual body, but it says a body in both; and thus I think our medicines are of that kind of spiritual body, and I am not ashamed to own it. I am not afraid to state that the microscope may not find the medicinal gold particle; still, in that water *there is the gold.* We have accounts that the old Indian physicians were far ahead of us in the knowledge of the use of remedies. They called them spirits, and they gave them the right name without knowing why.

Now, I like these tests proposed by Dr. Potter, and I would like to see a test applied. But these tests don't amount to very much to me, and the reason of it is that when men like the late Dr. William E. Payne, of Bath, Maine, or like Dr. Carroll Dunham, made an assertion, men who never left anything undone in their lives, I believed it. Dr. Dunham knew his pathology as

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well as any one. When he said it was pneumonia, it *was* pneumonia and not moonshine; and when he says he stopped a disease, that has its usual course of from eleven to thirteen days, with Phosphorus 200th, and the disease passed off, and the patient got entirely well in two or three days, I think it was pneumonia and that Phosphorus cured it. Now, Dr. Potter and the other gentlemen from Milwaukee will find nothing in it; but if a thousand persons should come and say that there was nothing in it I would not believe them. Their assertion would prove nothing to me as to the action of medicine in disease. We have the testimony of trustworthy men who have seen the benefit of it, and I do not want to have better testimony. I do not speak for myself; I ask physicians of high standing who think everything of pathology. If such men say we have done well, I don't see why we should give it up because a scientific body happens to decide against us. There may be a great deal of nonsense as well as a great deal of sense, but it does not answer the question, and it will never answer it.

DR. PEARSON, of Washington: I had resolved to take no part in this discussion; but it occurs to me as I sit here just now that there is a hereafter,—that these papers would appear some time in the far future, perhaps in the *Proceedings*, and I want to say something in opposition to some of the sentiments contained in them. I believe that it is the experience to comfort a man who has fallen from grace.

Now, I take it that Dr. Dake and Dr. Breyfogle are backsliders, and the only way I can see to benefit these men is to entirely change them. There is some more hopes of Dr. Sherman, for so far as I know he has never been converted. He and Dr. Breyfogle gave us some good homœopathy yesterday, but unfortunately for them it was all *copied from Hahnemann's Organon!*

There was one remark of Dr. Dake's to which I wish to refer briefly. If I understood him correctly, and I think I did, I heard the same objection made twenty-five years ago by an allopathic physician with whom I had a discussion. It is simply this, a point urged by these men very generally: the fact that patients recover after the administration of a high potency is given as an evidence of recovery as though it was owing to the high potency. Now I think I can make it plain to every member of the Institute that it was put in this way: that if Dr. McManus gives a few doses of the 30th potency to a patient, and that patient recovers, there is no evidence that the recovery was owing to the remedy; but if Dr. Dake gives a few doses of the 1st or the 3d, and if his patient recovers, it is conclusive evi-

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dence that the recovery was owing to the administration of the medicines. (Applause.) That is the proposition simplified.

Dr. McManus, Baltimore: After the able remarks you have heard while sitting here, I think it is almost a work of supererogation that I should speak at all; I believe it my duty, however, to say to this Institute, to the cause of homœopathy, and to the honor of Dr. Hahnemann something in reply to my practice in reference to the use of potencies. Forty-two years ago next November there did not live on the face of the world a greater skeptic than I was, for I was what I have often heard called a regular "wagon-horse" practitioner. I had promised to investigate homœopathy; I bought some books and commenced the investigation of the 30th attenuation to see whether there was medicine in it or moonshine. I did not know which, because I did not believe; I commenced by using the 30th attenuation of medicine. Of course I had no experience, but I had been investigating. They all talk about scientific investigation here, and I have been investigating myself, because I do not wish to be a humbug, and I never wish to humbug my patients. I have been investigating this thing for a good while, and I am going to investigate it as long as the Good Master will allow me to live. I need not tell you all that I should be a fool in my own behalf if I did not cure with it.

A member of the Institute told me something in regard to myself I never knew before, and in one respect I consider it a compliment. He said:

"I do not believe that in the whole forty-two years of your practice you ever cured a case of any kind of sickness with the 30th attenuation of medicine. I will not say that all your cases died, because you have the reputation of being a successful practitioner!"

I asked him: "Well, how do you account for their recovery?"

He replied: "Oh! there are a great many patients of physicians who get well without any medicine,—some from the tact of the doctor, and some from their confidence in the doctor, and all that kind of thing."

Now a man who begins with any attenuation, no matter what, must surely cure his patients or they will die; and they do die thousands of times for want of professional knowledge. It is a kind of impertinent absurdity on the part of any one to stand and tell a man who has been practicing for forty-two years and prescribing for, on an average, from ten to thirty patients a day, to tell him his medicine never did any good. Would you not suppose I ought to turn around and ask this man, "Do you suppose all these thousands, yea, tens of thousands of cases who have put themselves under my care, required nothing but sugar to get well on?" Is there any person who would make such a

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preposterous assertion? No! If any of these gentlemen who are skeptical will come to me and say, "Dr. McManus, do you pretend to cure a fever?" I will reply, "Yes, sir." "Can you cure bilious fever?" I will say, "Give me a case of what you call bilious fever; let me have entire charge of the case; I will not tell you what medicine I am giving, if any at all. But I will take upon myself the total responsibility of the case and the result. Then, if I cure that case, which you have pronounced bilious fever, if I cure it, and you see it, will you believe me?" "No, I won't," he replies. (Laughter.) Then I will say to him: "If you cannot believe the testimony of your own eyes and senses, who can convince you?"

Now this Institute is going to be disgraced by these conflicting theories. Some men declare that nothing above the 6th attenuation will cure disease. Why do they say so? Because they never use anything higher. So-and-so told me he never cured a case with the 30th attenuation in his life. I asked if he had ever given it. He replied he had not, but understood that others had. I said I had given it with success for the last forty-two years. But who is to be convinced? These discussions as to the efficacy of the high and low potencies are going to ruin the Institute. It is going to harm homœopathy more than all the allopathic books ever did. (Applause.)

I had the pleasure of travelling with a man I never met before; he lives in Brooklyn, and we began talking on this subject. He talked like a sensible man. He told me that he had been practicing medicine twenty-five years, and had never given anything higher than the 200th; he had more success with that than anything else. I have no objection to any one using what he pleases so he does not call me a fool because I do not get up to the 2000th, nor Mr. A. a fool because he don't come down to the 30th. Whose business is it? And since the practice of every man must correspond with his success, his success will soon demonstrate what he practices. His success must be established by his cures; and if he cures, it is no matter with what potency he does it. I regret in my declining time to see in the distance anything arise that is going to be the death of the career of this Institute. Coming men are bound to differ on this subject. Let them go into a room, shut the doors and windows, put out every one, and then compare notes with each other, and not give way to this spirit of villifying a distinguished man and calling him a blackguard, and all that sort of thing. Where will the thing permanently stop? You must stop it, or otherwise you will have to stop your science. (Applause.)

Just as certain as there is a God in heaven, I say it reverently,

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if this thing that is going on now continues, you must abandon your Institute of Homœopathy. (Great applause.) No, let us be like a band of brothers; if we differ in any essential, it is a fact that we differ from necessity. It is for A. to do it, and for B. to do it. Now in the name of Dr. Hahnemann let us be in earnest in this matter. In the name of the Institute, in the name of God, be at peace with each other; and if one considers the other wrong, and if he considers himself to be aggrieved, why, let him in the name of charity do to others as he would have others do to him.

Dr. Cooke, Chicago: It strikes me, Mr. President, and it struck me yesterday, that the platform of the American Institute of Homœopathy is not precisely the arena in which to ridicule homœopathy. I would not, however, state this in the first place but for the remarks of my venerable friend McManus. I have only to tell a story not very long. I think that my attention was called to the possibility of the 30th doing something by an act of Dr. McManus, and since that I have gone up the scale; and the older I grow, the scalier I get.

My little baby was brought into the room at my house, at the last occasion of the meeting of this Institute in Chicago, with a ringworm three days in progress over the left eye. We were at the table, and the children were bidding us good-night. Dr. McManus would not kiss the baby, because it had a ringworm. He said: "But I will kiss it to-morrow night, when the ringworm shall be cured;" and, after dinner, he asked me for my *Materia Medica*, for the *Symptomen Codex*. I said I had a very excellent copy at my office. "But," he said, "you cannot stay through the night in your house without the *Symptomen Codex?*" Says I: "I cannot, but I do. I will never do it again." He was not satisfied until he came to my office the next day, and studied my *Symptomen Codex*, and I recollect very well I wanted to be in the Institute while I had to get the tools for Dr. McManus to work with. He seemed to be terribly puzzled and vexed because of the time allotted to him; he could not find the remedy that had a particular symptom over the left eye; he could only find it over the right eye, which I thought was all sublime nonsense,—with all due respect. He, however, gave the medicine as a *dernier ressort;* it was Capsicum which had the ringworm over the right eye, and he gave it to my wife, as he would not trust me with it. One little powder of the 30th of Capsicum to give the baby at night; another to be given in the morning if the ringworm had not disappeared. Now I am not sure, but I think my wife shook me in the middle of the night, and said: "Frank, it looks to me as though that ringworm was fading out; I don't

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know whether to give that other dose or not." "Let us wait till morning," said I. "No," said she, "I want to follow instructions." I arose and turned up the light. I said: "I guess I do not see well enough." When the baby was brought to the breakfast-table the next morning the ringworm was almost gone.

The remedy was never repeated, and the ringworm was out of the way in twenty-four hours.

DR. J. EDWARDS SMITH, of Cleveland, Ohio: Ladies and Gentlemen: I have a few words to say. If I take a keg of gunpowder and put a red-hot iron into it, there will be an explosion, and it will hit back; so, if I strike a keg of nitroglycerin, there will be an explosion; so with relation to the discussion of matters that are legitimately brought before us. We can do it in such a manner as will go out and appeal to sensible people all over the world; if we cannot do that, let us dry up and go home. Now, my friend Dr. McManus thinks it desirable for me to follow him, and, gentlemen, I am so much his junior and of less experience, and it is a very ungrateful thing; but as a scientist there are some things that I am bound to preach on when I get the chance.

First, let us notice some of the arguments he has given us, and see how far they will agree. It has been my vocation for several years to lecture to students in a medical college, and I have invariably found the first year student, on his first lecture, knew more about the efficacy of highly potentized medicine and high potencies than any other man. He can discount Dr. McManus, discount his practice. Now, as Dr. McManus tells us and as we all know, he has had an honorable and lengthy practice, has been successful, and has been revered by his fellow-men. We all revere him, and hold him in veneration, but you have got to look straight at the facts. Now, I propose a plan here for the success of which I propose to answer with my life; if it fails you may take my head for a football, and my body for the dissecting-table.

I refer you now to Dr. R. V. Pierce, of Buffalo, with this broad square statement, that he has cured ten men to Dr. McManus's one; and he has got the written evidence of it, and the very best class of evidence, senators, lawyers, ministers, governors; men whose statements are bound to be received and admitted; Dr. Pierce has cured ten men to Dr. McManus's one, and, therefore, *ergo*, sugar is the same thing.

DR. PEARSON: He copied the names from the tombstones.

DR. SMITH: I think he will beat you fairly on that, sir. (Laughter and applause.) Let us stop once more for a moment, and then go on.

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First. The gentleman (Dr. Allen) when he got up, was willing to try the Milwaukee test. He was willing to try the Milwaukee test, and he said: "If I succeed, and if I at first point out the remedy, then you have got to admit the efficacy of the 30th dilution." There was a good deal of blaze about my friend out there; he got hold of a chair, and began to pound it. He then said more than that: "If I do succeed you have not only got to own the efficacy of the 30th dilution, you have got to do more, you have got to own that they are more efficacious, etc."

DR. MORSE: I would like to ask you a question. Will the test be a perfect one?

DR. SMITH: Now there is only this to say; it will be if he does it; *if he does it*, then there is time; if he does not, then it is not his place to crow. Make him go to war and fight the battle, then come back and do it over.

DR. DE GERSDORFF, of Boston: I am what is called a low dilutionist, but I am a homœopathist, and I revere the name of the great founder of homœopathy as much as any of you can. I am also happy to say that I belong to those who would not wish to have his memory burdened with all the extravagancies of his late followers. He was a reformer; he had to give strict rules, and had to insist upon obedience and close following; and from that proceeded, in the course of time, a certain peculiarity of the whole sect of medicine to which he belonged.

Hahnemann, as has been often said, would not have been opposed, to-day, if he was promulgating his theory as he was then, by the old school, because he was then ahead of his time and the science of his age. He was even ahead of his own knowledge of physiology and pathology. His grasping genius caught at this method, which he hardly could explain—the mysteries of himself. At his time, and shortly before, the great leading men had a peculiar faith in the certain inherent power of medicine. They sought an arcanum without having found one. Hahnemann found an arcanum. He found the secret, not of one remedy, but of all the remedies, by a certain method, namely, by homœopathy. Certain errors adhered to him in later life; he began to see more importance in the dose than before, he thought more of the remedy than of the other side, than of the recovery of the case. He put, in other words, the dynamization in the remedy, while it ought to be put in the recovered vitality of the body. I have, in my obscure and simple way of practicing homœopathy, never got any further than this way, that when we use it according to these symptoms, from a distinct law, we come to reduce the dose, and we can make a very little medicine do. Owing to what? Not owing to the inherent division of

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medicine; that is a physical and chemical body, not a physiological body; a physiological body which is able to have a vital reaction is the sick man; if the homœopathicity exists between the two, then only we get a cure. Therefore I have remained satisfied with my cure in the lower dilutions for almost forty years, and here and there have tried a higher, but I don't find it very necessary. I desire, however, to say to you, I would never wish to quarrel with anybody who can cure with the higher; they can do as they please about that, but I stick to homœopathy and the selection of remedies.

THE CHAIR: The time for the special business has arrived, namely, the special order for 11 o'clock. We will now listen to Dr. Alfred C. Pope, of London. Dr. Dake will close this bureau with a few remarks.

DR. DAKE: Mr. President, it is not my purpose to take up much time. In the first place, it will be clearly understood that the course this bureau has taken is with a view to discuss this subject plainly and squarely. There is no sort of quarrel about it. Now it is the very height of absurdity, it is entirely untrue, that this bureau, in any of its papers, has come in here to occasion a quarrel and to break up this Institute, though my worthy senior friend here seems to fear it. That is all nonsense. We are men, and we claim to be men of science. We claim facts as the basis of our belief; facts pertaining to this body—the human body, the material body and material things acting upon this body—we have not yet gone into the spiritual sphere. I wish to state some very plain propositions and to invite particular attention to them. I do so in answer to claims set up here in favor of the exclusive use of the high attenuations or potencies, and not because the clinical proofs of drug presence and power are especially called for by the subject brought before the Institute by our bureau to-day. From remarks made here a person, unacquainted with the history of homœopathy, might be led to suppose that everything had depended, from the beginning, upon this "spiritualizing" process in the preparation of medicines.

My first proposition is this: *That homœopathy was established successfully and firmly in the world by the use of low attenuations.*

Hahnemann, for the first twenty-five years of his practice, used nothing which the gentlemen on the other side would call high potencies. Beginning with the crude preparations of the shops, he gradually came up the scale of attenuations as far as the 30th. He considered the 30th as high; but others have gone beyond him and, to-day, talk as though his mantle could by no possibility cover anybody not given to the advocacy and use of "potencies" never dreamed of by the master. Men who suc-

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cessfully treat more patients in a day than some of these accusing high attenuationists do in a week or a month, are called "backsliders." They are lectured, here, for the very kind of practice that gave solid footing to homœopathy. How utterly absurd!

My second proposition is: *That the low attenuations, having been sufficient for the demonstration and establishment of homœopathy, there is no need of leaving such unquestionable means for those which are mysterious and uncertain.*

Why leave solid ground and go up into the clouds? Was Hahnemann's experience for twenty-five years a failure? Look around, over America, and over England, and over the continent of Europe, and see who have been curing the sick with homœopathic remedies, who have been fighting the battles and winning strongholds for the new school. With here and there an exception they have been such men as are here called "backsliders" by one of the speakers; *they have used low attenuations.* (Great applause.) I deny the claim implied, in the face of facts and history, that these high attenuationists have done all the curing.

A MEMBER: Nobody has claimed it.

DR. DAKE: I may mention two well-marked and alarming diseases, in the battle with which our system has won its greatest victories and made its grandest marches, and against which the low attenuations have been almost invariably employed, namely, Asiatic cholera and yellow fever. (Great applause.)

But I cannot enlarge. For myself I will say that I began practice with an outfit of the 30th, thinking to begin where Hahnemann left off; but I was not long in finding it necessary to go down the scale. I have used what is called the 200th and 4000th. I have had experience, up in the clouds, as well as some others from whom we have heard to-day. The experience is not all on one side.

But I will close with the remark that the papers of our bureau have been carefully prepared, that they are candid and respectful, and that not a single statement, either of history or fact, has been contradicted upon this floor.

The aim of the bureau has been to bring out the truth and nothing but the truth for the benefit of the Institute and of the entire profession. We will have the truth and the heavens will not fall.

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SECTION III.

REPORT

OF THE

BUREAU OF CLINICAL MEDICINE.

C. PEARSON, M.D.,	Washington, D. C.
N. F. COOKE, M.D.,	Chicago, Ill.
T. F. POMEROY, M.D.,	Detroit, Mich.
PHILO G. VALENTINE, M.D.,	St. Louis, Mo.
WILLIAM EGGERT, M.D.,	Indianapolis, Ind.
J. C. BURGHER, M.D.,	Pittsburg, Pa.
H. N. GUERNSEY, M.D.,	Philadelphia, Pa.
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WILLIAM GALLUPE, M.D.,	Bangor, Me.
L. KITTINGER, M.D.,	Wilmington, Del.
THOMAS MOORE, M.D.,	Philadelphia, Pa.
A. M. PIERSONS, M.D.,	New York, N. Y.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER III.

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LXXIII.

ON THE POSITIVE IN DIAGNOSIS BY TEMPERATURE.

By Nicholas Francis Cooke, M.D., Chicago, Ill.

In the autumn of 1856, having occasion to test the temperature of certain fluids, I improvised what soon proved to be the first "clinical thermometer" of which I had knowledge. It was a rude affair, simply an ivory scale beginning at 70°F., and terminating somewhere about 120°F. It had a long projecting tube and slender bulb, which, readily introduced through the necks of the smallest vials, soon demonstrated its efficiency in determining with practical accuracy the *normal and morbid temperatures* of the human body.

Thus, before the observations of Wünderlich had been received as revolutionizing the diagnosis of fevers, I had learned (in a certain groping way) that my thermometer and I were to be thenceforth inseparable friends. And these were the facts I had gleaned:

First. That the normal temperature of the human body is in accordance with the standard named, for nearly half a century, in all treatises on physiology, viz., 98½° to 99°.

Second. That a departure of more than one degree, minus or plus this standard, is always an evidence of some morbid process.

Third. That few if any recoveries occurred if the temperature mounted to 109° or upward.

Fourth. That a depression of temperature below 93° was of equally fatal import.

Fifth. That there were certain *typical ranges* of temperature

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that indicated, with almost mathematical precision, the characters of certain maladies.

In 1861–62 I obtained my first real "clinical thermometer" from Germany, and for three or four years was often laughed at for my *faith in it.* I enjoyed, during this time, a monopoly of clinical thermometry in my field of practice, so far as I have been able to learn. It was in 1860, '67 and '68 that I brought out my first *public* observations upon this subject, exhibiting both my original and the imported instruments, before the Illinois State Homœopathic Medical Association, a brief reference to which was published in the *United States Medical Investigator* of that period. The latter instrument was scarcely less rude than the former. Self-registering instruments were then unknown. All had to be read *in situ,* an operation not always pleasant, considering the shortness of the instrument and the locality then most commonly selected for observation.

With this long experience in its use, of almost daily observations for twenty-two years, it is no exaggeration to say that it really seems to me *incredible* that any physician can practice medicine without one. But the phenomenon exists and abounds. These Athermometrical doctors are found, not merely in "country rides," but they are numerous in our larger towns and cities. Those of you who were present at last year's session of this Institute will remember, with a feeling akin to pain, the merciless ridicule hurled at two of our members who, with a patience and complacency rarely found in our membership, sought to teach us the immense advantages of daily thermal observations on all cases *post parturiente.* Nor was this stultifying ridicule confined to the obscure and the unprogressive of our ranks. When the great obstetrician *Guernsey* pointed out the assistance which homœopathy might derive from these observations, he was assailed (even with ferocity) by a physician of national reputation, whose intelligence and whose skill in his profession have never been questioned! When the indefatigable *Ludlam* produced his "pictures" (as he termed them), in the shape of no less than fifty carefully prepared charts, which proved to a demonstration that, hours before a single rational sign may indicate the approach of a *peritonitis,* a *pelvic-cellulitis,* a *metritis,* a *phlegmasia alba dolens,*

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or a *septicæmia*, this little monitor gives the warning hint, and discriminates, as no human senses can, the approach of one or other of these terrors, and so really "*aids homœopathy*" by indicating, with supernatural precision, the remedy to be chosen.

"Fools rush in where angels fear to tread,"—but he must be a rash debater, and one careless of his reputation, who would venture to dispute "offhand" the carefully matured conclusions of a Guernsey or a Ludlam. They merit the gratitude,—as they have so often received the honors,—of this Institute in particular, and of the profession in general. I am more than pleased to announce to you that Dr. Ludlam, in addition to the large number of cases reported upon at the last session, has now fifty carefully prepared charts of the morning and evening temperature and pulse of that number of puerperal cases, normal and abnormal. With characteristic modesty he says of these fifty new cases (all observed during the last year at the Hahnemann Medical College and Hospital, Chicago): "They are all ready if we want them." It occurs to me, Mr. President, ladies and gentlemen, that these tables are precisely what we do "want," yes, and thousands more like them.

Were there nothing more to be said in favor of clinical thermometry than what these two distinguished obstetricians have given us, it would be the Q. E. D. to insure its daily companionship with every practicing physician. But there is far more. There is nothing in all practical medicine so positively accurate, so little conjectural. It tells even the tyro more in a week's use than the most acute practitioner could learn, without it, in a lifetime of arduous application. It substitutes mathematical exactitude for presumptuous guesswork. In 1864 a child of two years lay quietly sleeping in its cradle. Two physicians examined the little patient and agreed to report favorably. The skin was pleasantly cool and moist, the respirations somewhat slow and *simulating*, "cerebral," though a smile overspread the features and convalescence seemed to the experienced physicians clearly established. At the last moment, before terminating the consultation, the thermometer was placed in the rectum, which in two minutes reversed the prognosis by a temperature of 109°. In twelve hours the "sweetly sleeping" infant was in charge of

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the undertaker. The two physicians were: the translator of Grauvogl and the author of this paper.

But a few weeks since I was in consultation with a leading professor in one of our medical colleges. The case was capillary bronchitis, and the symptoms, though urgent, were at worst but of doubtful augury. The revelation of 108° F. left no room for doubt. Another consultation with the same gentleman; a child,—previously well,—had a temperature of 106° on the first day of illness. Excluding scarlet fever the diagnosis, "ephemeral fever," was sustained by perfect recovery within forty-eight hours. This child being a brother of the last case, and the illness ocurring but a few days subsequently to that catastrophe, the already afflicted parents had been wild with apprehension until the decision, "no danger," had been pronounced.

But it is useless to multiply examples. They are numerous and extend over a lifetime of professional experience. Sufficient are they, even without the daily corroborations by other and abler observers, to clearly establish the position that in diagnosis, as in prognosis, the clinical thermometer is indispensable to the intelligent practice of medicine in the actual state of science. It is true many of us have done without it during long and successful careers; but so have we "done without" the telegraph, the telephone, and (some of us) without steamboats and railroads. It may well be that no patients have been killed by neglect of clinical thermometry, but to say that none have been saved by the information it has imparted would be the extremity of ignorance and temerity.

I now offer the "picture" of a case of——? typical in its thermometric range, and I ask any experienced thermometrician to step forward and diagnosticate the case from its thermometric record alone.

A chart showing the thermal record of a case of phthisis pulmonalis was here exhibited, and about thirty physicians accurately diagnosed the case with no data except the temperature.

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LXXIV.

THE CURATIVE POWER OF POTENTIZED MEDICINE, WITH CASES.

By William Gallupe, M.D., Bangor, Me.

Man being the noblest work of creation, we have reason to assume that he was created sound and healthy, and with sufficient duties and labors assigned him to employ his time and talents, and to occupy all the energies of his mind and body; but, by the transgression of nature's laws, he became subject to disease in various forms.

From a very early date the human mind has been instinctively impressed with the belief that there was a curative power or principle inherent in a class of articles which has received, by general assent, the name of medicine, and that each article possesses some inherent properties peculiar to itself and differing from all others, though of similar appearance. This instinctive impression is recognized, and evidence observed of its existence even in animals, as shown by their resort to the unmistakable use of certain articles when suffering from distress and disease.

It has been observed that, as animal life rises in the scale of intelligence, so in proportion does its susceptibility to disease increase, so that man, with his superior abilities, is far more susceptible to disease than the lower animals.

Animal life is governed by a principle which is essentially nervous, vital, and immaterial. A nervous system necessarily involves sympathy and sensibility, and it is upon the nervous power of animal life that the rudiments of disease operate; and it is apparent that medicines, in order to produce their efficient curative

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power, must be adapted and brought to bear upon these vital powers. The relation of medicines to the organism, whether pathogenetic or therapeutic, must be in accordance with natural laws, and in harmony with natural phenomena.

If an ALL-WISE CREATOR was pleased to *atone* for the sin of the soul by the law of similarity, why should He not be pleased to heal the sick and afflicted from physical suffering by the same law? and will any one dare to charge his Creator with a false system of therapeutics?

No medicine can cure disease acting in the system unless it acts upon the diseased part either directly or indirectly. The more nearly the symptoms of a drug resemble those of the action of disease, the more nearly is its virtual approach to the diseased action. If medicines were designed by the Author of all good for the relief of suffering, is it not reasonable to infer that, if judiciously applied, they ought not to cause additional suffering? We claim that medicines do not act curatively on the vital organs in proportion to their bulk or weight, nor by their toxical power. We admit that they so act in the *production* of disease, but it is by an inverse proportion that they produce easy and permanent cures.

The pathogenetic symptoms of the drug being similar to the symptoms of the patient, its action must be directly upon the seat of the disease, that part being in an increased state of excitement or susceptibility from its abnormal condition; consequently a much more finely developed power of the medicinal agent is required to act curatively in a mild and easy manner, in imitation of nature's law.

Hahnemann began by triturating the coarser material of the drug with a certain proportion of a non-medicinal substance to break up the cohesive attraction of the particles of the drug. He soon found that the curative power was much increased by the minute division of medicines by this simple process. This opened a new era in the preparation of medicines; consequently the theory of potentization became established, though in accordance with an admitted fact of the old manner of preparation, that the *fine division of a drug increased its curative power*,—yet that was then

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supposed to be confined to matter in an insoluble state,—and that there was a certain limit to the divisibility of drugs.

Hahnemann now found such an increased development of curative power by several successive triturations, and such an increased susceptibility of the diseased parts to the action of the similimum, that he began with articles prepared in the fluid form, as tinctures in their proper menstruum, by succussion with an inert medium, and by successive progressions. This was soon found to be subject to the same law of potentization, and developed the increase of its curative power in the same manner and to the same degree as does the trituration of solid substances. It was also ascertained that articles previously considered as of very feeble or no curative properties exhibited, after undergoing this process, very remarkable curative properties, Silex, Lycopodium, vegetable and animal Carbon, etc., being examples in point. From the extent to which potentization has yet been carried the drug has been found still to retain its peculiar pathogenetic and curative properties.

I append six cases illustrating the action of the potentized drug, the 30th and 200th centesimal being used.

CASE I. *Carbuncles and Boils.*—Mrs. S., aged about fifty-three, of sanguine and nervous temperament; usual health good.

January 22d, has a large-sized carbuncle on left side of chest, just below the mammary gland. Has had nearly forty boils about the chest and abdomen during the last five months; some of them suppurated, but others, though quite sore and painful, terminated by resolution. These were of a purplish hue, and caused a burning, stinging sensation, as if from splinters passing through them. To-day there are six boils in the region of this carbuncle, within twelve or fifteen inches of it, in different stages, bordering on the suppurative process, of the size of a five-cent piece and larger. The carbuncle is fully four and a half to five inches in diameter, and causes the same prickling and stinging sensation as do the boils; also a severe burning sensation. It presents a dark-red and angry appearance, much more so than any of the boils have exhibited.

From these points I gave at 4.30 P.M. Nitric acid[30], four drops in half a tumbler of water; a teaspoonful every eight hours, until

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two or three doses are taken, then every twelve to twenty-four hours or longer if any perceptible mitigation of the symptoms occurred. I also left directions to dress the carbuncle with a cold-water pack, and a small one over each of the boils, which were very painful; the dressings to be renewed if the parts became heated and painful.

February 1st, reported decided mitigation from the first and second doses; slept much of the night; in the morning felt but slight pain and soreness. The stinging, burning and pricking pains had disappeared. Carbuncle in a quiet, subdued state, the boils quite comfortable and very little uneasiness in any of them. Some sore feeling about them. Took the third dose the next evening, twenty-eight hours after the first dose, and during the next twenty-four hours all soreness and uneasy feeling about them was gone, and there was no appearance of any boils afterward.

CASE II.—Mr. S. had been suffering from a carbuncle on the right hip and nates for a week; had been poulticing it for six days and nights, renewing the poultice every two to three hours. The parts had been quite painful from the first. The carbuncle opened three days since by a large surface about one and one-half inch in diameter, with holes in it the size of a small pencil, but did not afford much relief.

The areola was larger than the top of a common saucer, five inches or more, with purplish rings surrounding the opening. It presented a hard, shining appearance, and caused a *compressed tight feeling, with an outpressing sensation.* It discharged a thin, ichorous, watery secretion, from which a sore will rarely, or only after a long time, heal; *hot, dry skin; frequent thirst,* but for a *swallow or two at a time.* The *compressed, tight, and outpressing* sensation was prominently *aggravated by any movement,* but must turn frequently, being obliged to lie on left side; occasional chills, but the *dry heat predominated.* Bryonia alba appeared the prominently indicated remedy. I gave eight or ten pellets of 30th potency in one-third of a cup of water, two teaspoonfuls at 9.30 P.M., to be repeated in two hours, and again in three to five or six hours, as was needful. As soon as relief of the *tight, compressed feeling, general dry heat,* and restlessness occurred, the interval to be still further lengthened, or the medicine with-

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drawn. I covered the raw spot and the whole areola with a cold-water pack.

Two days later patient reports some relief from the first dose, but a marked relief soon after the second; but as he did not get quiet enough to sleep, took the third dose between three and four hours from the second, then soon fell asleep and slept soundly for three hours. He awoke in a profuse perspiration and free from pain; could walk about and sit down easily, as he had not done for six days before.

At eight next morning he rode three miles in the cars to his place of business, and sat around on benches and chairs all day without any trouble. The sore healed kindly, and gave him no further trouble.

CASE III.—Mr. P., aged about 25 years, works in a brick-yard, handling the cold clay, etc., came to me on Sunday, about 10 A.M.

A felon was forming on the lower third of the second phalangeal bone of the forefinger of the right hand; began about thirty-six hours before; obliged him to stop work yesterday morning, and was soon quite painful; had been poulticing it over twenty-four hours, renewing them every two or three hours. The pain had been quite severe all day and night, preventing him from sleeping. The whole finger was much swollen; pains extending to the wrist and elbow; much heat and *painful throbbing; tight compressed feeling* with *outpressing sensation* as though it needed more room; *dark, congested state* about the part; much general heat of the whole hand and arm; chilly feeling at times, but the *dry heat was most prominent.*

These symptoms are characteristic of *Bry. alb.* I gave him four powders, of three or four pellets each, of the 30th potency. Gave him one on the tongue about 11 A.M., the dose to be repeated at 4 or 5 P.M., and at bedtime, unless it got easy so as to let him sleep. If painful on awaking the third powder was to be taken, if not easy in the morning to take the remaining powder, and to stop the medicine when the pain should be relieved. The finger was dressed in a cold-water pack, to be renewed if it felt hot and pressed. If he did not feel able to go to work by 10 A.M. next day, to let me see him.

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Three days after, as I was passing the yard, I called for him to report. He stated that the first dose relieved him considerably; he repeated it at 4.30 P.M., and soon got quite easy and slept during the evening and forepart of the night, and had a free and general perspiration. There was some dull pain in the finger; took the third powder near midnight; soon quieted and slept until morning. At 8 A.M., felt some tenderness about the spot; could bend the finger easily and freely and without causing any pain. Took the other powder and went to work about 10 A.M., handling the cold clay, and felt no further trouble from it.

CASE IV.—Felon on the first phalangeal bone of the middle finger of the right hand, affecting the lower third of the bone.

Mr. P., aged 55, usual health good; suffering severely from it for over a week. Had been poulticing it for six days and nights, renewing it every two or three hours.

A physician of thirty years' practice had opened it freely three days before, and advised to continue the poulticing, more frequently renewed, until relieved. After two or three hours the pain increased until he could scarcely bear it, and has continued so ever since. No sleep for three days and two nights; he walked the floor with his hand held up until exhausted, and throws himself upon the bed for awhile.

"The doctor called this morning and says I must poultice it forty-eight hours longer, and then he thinks he could open it more freely and scrape the bone so as to clean it out."

He felt so exhausted from its severity that it did not seem possible for him to bear it much longer and asked if I could afford him some relief, as I had previously been acquainted with him. I told him I thought that he might be relieved; was sure I could do no worse for him.

The finger was much swollen. The opening had been made more than an inch in length. The part was highly inflamed; red streaks running to the wrist and even to the elbow; with sharp pains up to the elbow and shoulder, piercing in the finger; discharge of a thin, ichorous, watery, brownish fluid.

The *character of the discharge, the membranous texture of the parts affected,* and of the *periosteum of the bone,* as was quite ap-

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parent, the feverish state of the system, *alternating with chilliness*, and *great nervous debility with exhaustion*, seemed characteristic of Silicea, of which I gave one dose 30th in water, two teaspoonfuls every two hours, until it got easy so that he could sleep; if so to wait until improvement ceased and the pain returned. Then enveloped the finger in a cool water-pack, and covered the whole hand above the wrist with soft flannel, so as to exclude the air.

Ten days afterwards he reported: First dose eased him considerably, and the second very decidedly, but got no sleep until after the third dose, then was easy and slept three hours soundly. Awoke with a profuse perspiration and free from pain; could bend the finger freely, and felt no soreness. The finger healed rapidly.

CASE V.—Master B., aged 11, nervous temperament, light complexion. Had had a trouble about the nose for seven years, beginning after a severe scarlatina, which gradually increased, and for the last three years has scarcely been able to breathe through either side. While walking or going upstairs cannot bear to have mouth closed, nor when sleeping. Loud snoring during sleep, with frequent spells of choking; must be aroused to prevent strangulation. Frequent spells of *bleeding and coryza* from the nose and from slight causes.

Both nares much obstructed, and filled up with polypi, which appear to arise by a broad attachment from the spongy bones; much enlargement at the upper part of the nose, as though something from within had pressed the nasal bones outward, so as to show quite prominent at first view of his face.

His mother said this swelling out of the nose was noticed about two years since, and had been gradually increasing; had used injections of medicated substances, by advice of allopathic physicians, but without any change. A homœopathist treated him for them for some months, repeating doses three and four times per day, but without any improvement.

Teucrium mar. ver. appeared to cover the prominent symptoms of the case; gave five powders of 30th potency, a powder twice a week at evening, and after three weeks to call and report. During the fourth week he reports much improvement;

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can breathe through nose easily; much less noise while sleeping; the pressed sensation in nose is much less; and feels better generally; can keep mouth shut much longer. Gave five powders more of Teucrium 200th, to repeat once a week only. After seven weeks, reports all well now; no discharge from nose, as had been the case for six years or more; can walk or run uphill with mouth shut. The cavities appear to be in their normal condition, and the fulness at upper part of nose is gone.

CASE VI.—Master H., aged about fifteen years; general health good. On my first seeing him, I noticed a polypus hanging out of each nostril down to the lower edge of the upper lip.

His mother said he had been so, at times, for a year or more; they did not know that anything could be done for them. His nose had troubled him for ten years, more or less; much discharge of watery mucus from both nares, especially in warm or damp weather, and more or less all the time; much obstruction in breathing in both nares, especially at night.

Teucrium mar. ver. appeared indicated by the prominent symptoms, and I gave five powders 30th potency, the dose to be repeated twice a week for two weeks. After five weeks he reports much improvement; can breathe through the nose much better; had no protrusion since, and much less of the secretion from the nose; and is feeling much better. The remedy was continued, one powder a week. Shortly afterwards the family moved out of the city, and I lost sight of him for fifteen years. I then met him, when he reported that there had been no further trouble, until about a year ago, when he took a severe cold, and felt a return of some of the "pressed feeling," but not sufficient to prevent his breathing freely and easily through the nose.

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LXXV.

CAUSE AND EFFECT IN DISEASE.

By C. Pearson, M.D., Washington, D. C.

An abnormal condition of the human organism is usually, if not always, the result of a combination of causes.

There is no such thing as a local disease, *per se;* a mechanical injury is not a disease, and when general disease is the result, it is owing to latent causes existing in the system.

It may not be possible always to assign causes for all effects, though they undoubtedly exist. Small-pox, or even vaccination, will not affect those, in whose systems no condition exists for which the virus has an affinity. There is no good reason why there should not be a prophylactic for every contagious disease. I believe there is, and that discoveries in medical science will ultimately demonstrate this, and that in every instance it will be found to be infinitesimal, or dynamic in principle, and homœopathic in its action.

Notwithstanding disease has ravaged this earth ever since the race began to populate it, and, notwithstanding the great advance in medical and sanitary science, and the general intelligence of the people, the theories in regard to the origin of epidemics in one age have been abandoned in the next, until to-day little more is known as to their cause or of its *modus operandi*, than did the physicians of the Middle Ages.

In proof of this we have only to look at the innumerable theories advanced, regarding the cause of yellow fever. Writers state confidently that the old theory of miasm is abandoned, and the more modern one of bacteria or germs substituted; yet they are forced to admit that if these parasites exist, no glass has

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hitherto been invented powerful enough to detect them anywhere prior to the development of the disease in the system, and it is a question whether they are not a result, rather than a cause of disease; and, while they see on every hand the destruction and devastation produced by this invisible, incomprehensible and indestructible agent, for disinfectants are found to be a failure, they pronounce as inert any remedy or proposed remedy which the microscope is unable to detect, the scales to weigh, or the tongue and nose to recognize. We might suppose that evidence such as this ought to convince the most skeptical that, while the invisible causes are the most indestructible, and most powerful in causing disease in the healthy organism, they are also most potent in relieving the highly sensitive system of its diseased condition.

A grain of musk or a fragrant flower may be easily destroyed, but their odor is the last to perish. A patient dies of some contagious disease, and is buried, but the contagion does not die with him; on the contrary, it becomes more potent the more it is attenuated with the atmosphere, as is illustrated by the steam from the boiling of clothing of small-pox patients. But does it follow that, before we can stop the spread of this contagion, we must localize it, describe its color, weight, size, and elementary principles? We know from its effects that a cause exists, and from its manifestations we know upon what organs it has a specific action, and the remedy at once suggests itself. The skilful botanist is not obliged to expose the root of every plant before determining to what class it belongs. He inspects the flower and the leaf above ground, and knows full well what the root must be like, though hidden from view; and so we may determine the pathology of a disease by becoming familiar with the natural language of each diseased organ.

But how often is this outcry mistaken for the cause, and the top removed while the root remains. General debility, constipation, toothache, the growth of tumors, hæmorrhoids, prolapsus uteri, and many other manifestations of deranged forces are still spoken of and treated as primary causes. Is the patient weak? He must be stimulated. Are the bowels confined? Give a cathartic. Do the teeth ache? Extract them. Are tumors form-

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ing? The knife is the remedy; and in this palliative treatment some who claim to be homœopathists are little behind their allopathic brethren. When will physicians learn that nine-tenths of all cases of debility, except from age and mechanical causes, arise from gastric derangements; that no permanent strength can be forced into the enfeebled constitution by stimulants, Quinine, or Iron; that all growths are curable; that nature may be assisted, but never forced into measures; that her terms of compromise are simply nourishing diet, with a healthy digestion and assimilation. How unmeaning then is the statement that the patient died of nervous prostration, or from convulsions; that constipation is one great cause of headache, or that teeth ache because they are decayed! Confined bowels are no more the cause of headache than headache is the cause of the constipation. I recently treated a patient for intermittent fever whose bowels did not move for fourteen consecutive days, not, in fact, until the chills, fever, headache, and every other symptom of disease had disappeared. A decayed tooth may form a nucleus where pain may concentrate, so may a bunion, or corn on the toe; but when the equilibrium in the system is restored the pain is no longer experienced.

We know that whitlows, phlegmons, tumors, and even cancers, may follow mechanical injuries, but are these injuries the cause of these formations? Do all bruises result in felons or tumors, or all wounds in erysipelas? There must be a latent cause, or peculiar idiosyncrasy existing in the system at the time, to cause these developments, and our treatment must be directed not to the phenomena, but to the cause, as we see it manifest itself in the symptoms.

Von Helmont said the science of medicine did not advance, but turned on its axis, and it would seem as if we were fast nearing again the days of the specialists, when there was a doctor for every part of the body. Hence we see cancer doctors, lung doctors, eye and ear doctors, nose doctors, corn doctors, worm doctors, and pile doctors, and patients are beginning to fancy they require a separate physician and separate treatment for each and every organ. Very recently a gentleman applied for treatment

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for lung disease, while a specialist was doctoring him for hæmorrhoids; and when I declined, under the circumstances, to prescribe, he could not comprehend how the treatment could conflict, as the parts to be treated were so far apart, which in his case was, to some extent, true, as he was a very tall man. And it may often be observed that these specialists, always on the lookout for such diseases as come within their specialty, have no trouble in finding them. The cancer doctor finds cancers everywhere; the worm doctor attributes everything to worms; the lung doctor to the lungs; the eye and ear men go for these organs respectively; the knight of the speculum, the uterine sound, and the pessary finds the uterus the seat of all misery and wretchedness, while the dentist declares it is the teeth; and the people, taking it for granted that each and every disease must have a local habitation and a name, seem, in some instances, to regard the name as little less important than the cure. A countryman once called, assuring me he had uterine hæmorrhage, saying his wife had had it once, and that she complained very much as he did, and when, after mature consideration, I decided that I could check the trouble before it got that far along, he appeared much gratified. One will tell you that the liver is not acting; another, the bowels, the poor bowels! If they should happen not to move for a day or two, they must be accused of every kind of mischief.

Now there can be no excuse for this condition of things, unless we admit the local character of disease. If the leaves wither, or the limbs are imperfect, look to the trunk or the root; REMOVE THE CAUSE, AND THE EFFECT WILL TAKE CARE OF ITSELF!

A gentleman, last October, called to consult me in regard to a polypus far up in his left nostril. He stated that some five years ago it had formed in the same way; that a surgeon had *cured* it with forceps and the knife. He felt that the growth had been gradually increasing for a year, until it now filled the passage so that no air could be forced through. No other symptoms could be elicited. I prescribed, on the 6th day of October, two powders of the 50^{m} potency of Thuja, to be taken twelve hours apart, and two more on the 27th, three weeks afterwards. On the first

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day of November, twenty-five days from the time of taking the first medicine, he blew the mass, the size of a large bean, from his nose, and has remained well ever since. A pair of forceps would probably have removed it in less time than twenty-five days, but they would not have removed the cause so effectually in twenty-five months. Any one could have done this just as well by resorting to the same means, but they will never succeed so well if they have not confidence enough to try.

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APPENDIX.

DISCUSSION.

THIRD DAY—MORNING SESSION.

DR. C. PEARSON: *Mr. President, Ladies and Gentlemen of the Institute:* Soon after the appointment of this bureau, I conferred with the members in regard to the propriety of selecting one subject, on which to write, or leaving the members free to select whatever subject they might see proper. I found there was a universal verdict in favor of the latter plan. Had Dr. Pomeroy been here he would have read a paper on the "Clinical Art." Dr. Valentine, of St. Louis, told me he would be here and continue the subject of "Menstrual Septicæmia." Dr. Henry N. Guernsey, had he been here, would have read one on the "Reality of Medical Truth;" but his health was very delicate, and on the 14th of this month he sailed for Europe. He bade me remember him kindly to the Institute, and I trust that I only express the wish of every member, in hoping that he may return with renewed health and vigor, and that he may live many years to battle for the truths of medical science, as he understands them.

DR. LEWIS D. RUNNELS: *Mr. President, Ladies and Gentlemen:* I was very much pleased with the report of the cases, made by my worthy friend, Dr. Gallupe; but I think that the doctor relies too entirely on medicine, and ignores surgical operations too much. He says that in the course of several years he has not had occasion to ever open a felon on the hand, as he has been able to remove it entirely with medicine. I think that is very well, if you can see a case in its incipiency, when the disease is just commencing; but when you have got pus, it seems to me that it would be wisdom on the part of the physician to open at once, and let the pus out; that is the part of a good surgeon. I think the tendency in our profession is to rely too much upon remedies to help us out of all difficulties, when, if we knew more of pathology, and knew more surgery, we would be more able to

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cure our cases. Still, I like the paper of Dr. Pearson very much. I recognize the fact that we, as physicians, do not discriminate enough. We *do not* pay enough attention to pathology and to the science of disease. We do not study our cases enough. It is right to study up the cases carefully and get our remedy, but it is also right to know the cause of disease, what produces it, and what the probable result will be. The homœopathic Materia Medica is not all submission, and adjuvants, in the way of surgical applications and appliances, should be often thought of.

Dr. Krebs: I would like to make a few remarks in corroboration of the statement of Dr. Gallupe. I have been treating these felons for the last twenty or twenty-five years. I have never used the knife for them. If they came to me within one or two days of their appearance, or the next day after that, I was in most cases able to remove all traces of the symptoms in a day or two with a single remedy. Wherever they come under my care, and have been restless, I use Nitric acid as an external application, and within twelve hours I draw every particle of matter to the surface. That is my experience; I have not used a knife, but have been "sticking" to a single remedy and a repetition of the dose. Speaking of that matter, I would say that the repetition of the dose has not been mentioned here during the whole meeting. That is a point that homœopathic physicians ought to take very much to heart. All we can expect from medicine is that it will produce a reaction in the system, and as long as a reaction is continued it ought not to be interrupted by a second dose of another remedy. I will illustrate that idea. You go near a pond of still water. You want to see the irregularity and the quantity of waves that will arise,—"the rings." If you throw in a stone you will produce certain rings; if you throw in a second stone before your first rings have disappeared, you will have such a mixture of rings that you will not be able to recognize which is which.

Now, it is the same with a repetition of medicine. Wait for a total reaction of your remedy, and then if it has not produced a desirable effect, *the* desired effect, you may be sure that the second, third, or fourth dose will not. You must be able to recognize the reaction of your remedy, and when that is passed, you repeat your dose. The choice of the remedy is most worthy of consideration. This cannot be determined as yet by examinations with a microscope, because the microscope will not make the decision in these cases. That is out of the question. It will be from twenty to forty years before we know when we have reached the attenuation of remedies.

Dr. Gallupe: In answer to an inquiry of a gentleman, I

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would say I have been in the habit of curing these cases for more than twenty years. I have from three to ten cases every year, some years more than that. I had ten cases last year. I had one case run four days with poultices applied to it, and there was no matter formed; it was just on the point of forming. I then gave the remedy that cleaned out the whole thing. No opening was necessary. That case I reported. What do you want the knife for? A little Silex cleaned it out mighty quick. Ten hours will do the work. The finger healed up kindly, and the man went off to work the next day.

A MEMBER: What do you do if pus is present?

DR. GALLUPE: I have sometimes questioned whether there was not pus, and I have given a remedy to take down the inflammation. There will often be a little tender spot; if there is, a little Hepar, the 30th or 200th, will shoot that right out in twelve hours, so there will be a perfect cure. It will heal right up from the bottom, and there need be no cutting about it.

On motion, the convention adjourned to meet at 9 o'clock, the next morning.

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SECTION IV.

REPORT

OF THE

BUREAU OF OBSTETRICS.

J. C. SANDERS, M.D., CHAIRMAN,	Cleveland.
J. H. WOODBURY, M.D.,	Boston.
C. P. SEIP, M.D.,	Pittsburg.
J. F. COOPER, M.D.,	Allegheny City.
W. N. GUERNSEY, M.D.,	New York.
W. H. HUNT, M.D.,	Covington, Ky.
CORN. ORMES, M.D.,	Jamestown, N. Y.
O. B. GAUSE, M.D.,	Philadelphia.
MILLIE J. CHAPMAN, M.D.,	Pittsburg.
W. C. RICHARDSON, M.D.,	St. Louis, Mo.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 12.

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LX. Carcinoma of the Cervix complicating Labor, . . . C. T. Canfield, M.D.
LXI. Stomatitis Materna, ... Millie J. Chapman, M.D.
LXII. Eccyesis, ... C. Ormes, M.D.

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LVII.

TREATMENT OF ADHERENT AND RETAINED PLACENTA.

By O. B. Gause, M.D., Philadelphia.

At the meeting of the Institute in June, 1875, my learned and esteemed colleague, Professor J. C. Sanders, M.D., of Cleveland, read a paper on "The Third Stage of Labor, its Duties and Management." Professor Sanders, the chairman of this bureau, has not only given his consent, but urged me to present this paper, else I should have declined to do so. His paper is so full, covering the general subject so completely that I shall confine myself to a small but important part, viz., adherent and retained placenta.

My apology for presenting this subject to the Institute again so soon is, that this is the one point in the "third stage" upon which the accoucheur ought to have clear convictions of duty as well as clear conceptions of the situation.

The act of parturition is an uncompleted one until the delivery of the placenta and secundines. Ordinarily the "third stage" occupies such an insignificant period of time, as compared with the birth of the child, that exceptions to the rule are by many regarded as fraught with peculiar danger on account of the delay.

We desire in this paper to give less prominence to the factor of time and more to the factor of conditions. We do not need a chronometer to determine the question of duty. What we do need is a comprehension of the situation specially and differentially and in its totality.

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1st. Specially and differentially. True adhesion of the placenta is an exceedingly rare complication of parturition. Some of our textbooks do not speak of it at all.

Retained placenta is much more frequently present. Adherent placenta depends upon conditions set up and completed during gestation.

Retained placenta depends upon conditions which make up a part of the phenomena of labor. The former is organic, the latter functional.

The organic conditions, which result in adhesions, and which are set up during gestation, may be of two kinds:

1st. Morbid proliferation of endo-uterine tissue into which the chronic tissue becomes so imbedded or interneshed as to form a union not easily broken up by the uterine contractions which accomplish the expulsion of the child.

2d. An inflammation at the placental seat by which there is thrown out a plastic lymph causing an adhesion between the maternal and fœtal portions of the placenta. These adhesions may prevent the prompt separation of the placenta after the delivery of the child.

It is possibly not a matter of great importance to be able in every case to differentiate these points of causation, in order to determine upon a wise and effective course of treatment; but it is, in our judgment, a matter of the utmost importance to differentiate between adhesions and *retentions*.

We have denominated the latter a functional condition, constituting a part of the phenomena of the third stage,—due to some fault in the forces which should complete the labor,—inertia, shock, irregular contractions, spasm, etc.

It is manifest that the management of these varieties of cases must be modified in accordance with the causative conditions. But it is not sufficient that we consider these specialties of the case, we must also regard the totality, *i. e.*, the injurious effect which the complication is having, or likely to have, upon the parturient woman.

In general terms we may say that the evil effect of simple retention of the placenta is immediate and pressing, while the evils of the adherent placenta are prospective. In the one case it is

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flooding, in the other septic poisoning. The management of cases of retained placenta are fully pointed out by Professor Sanders, and will be found in Section IV of the *Transactions* of the twenty-eighth session, so that I will merely refer the members to his elaborate paper.

We come now to the real object of this paper, viz., the management of cases of true adherent placenta.

Professor Sanders says of these, page 376, Section IV, Article XLVI: "Although the natural forces are presumably inadequate to detach a placenta morbidly adherent, yet it is clearly our duty to give these forces opportunity for their fullest and freest exercise, even to the limitations of justifiable delay, aided and supplemented by every regimenal and therapeutic means within our resources. When this limit has been reached manual delivery is our *dernier ressort*."

Professor Sanders had previously placed this "limit of justifiable delay" at six hours. It is at this point that I take issue with my friend. I repeat, the duty of the accoucheur is not to be pointed out by the hand on the dial. I take exception to the first thought in my quotation. I do not admit that the natural forces are "inadequate to detach a placenta morbidly adherent." I assume, on the other hand, that the natural forces are adequate *when there is nothing to be met but the question of adherence.* I claim, too, that we may expedite the spontaneous detachment by therapeutics. I claim that, in the hands of a vigilant accoucheur, the convalescence of a woman, with an adherent placenta, pure and simple, is damaged by the introduction of the hand into the womb, and by force tearing away so much of the placenta as may be practicable. By this measure we remove the whole duty out of the domain of nature, and by art only very imperfectly do the work. I claim that the portions left, together with the traumatic lesions inseparable from our efforts, increase all the prospective dangers which may be apprehended from prolonged waiting for a spontaneous separation. What are the dangers which beset the lying-in woman whose placenta remains firmly adherent after the child has been expelled? Flooding and septic poisoning.

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1st. Negatively, she is not in danger of flooding until separation, in part or entire, has taken place.

2d. *Negatively*, she is not in danger from septic poison until after detachment. The organic union is so intimate that the healthy vitality of the uterus will act antiseptically upon the chronic tufts until that union is broken up. My practice and teaching upon this subject are as follows: 1st. Carefully diagnose and differentiate the case. Never forget that the parturient act is uncompleted until the afterbirth and membranes are delivered. Keep the patient under hourly observation therefore until this is accomplished. If it is a case of retention, art will most likely be required to deliver it, as the cause, in a large majority of instances, is due to defective or deficient uterine force. If the case is one of absolute adhesion, watch with unceasing vigilance; give the appropriate remedy, attend to the regimen and wait, expecting that nature will be adequate to the accomplishment of a spontaneous separation. When this has been effected the case becomes one of retention, to be treated the same as though it were a primary one.

My practice and my teachings inculcate the doctrine that the introduction of the hand into the womb beyond the cervix is only justifiable when it becomes necessary to choose between this evil and one that is greater, as, for instance, in severe flooding.

I have met with but three cases of positive and unmistakable adhesion in the past eighteen years. The first was a case of miscarriage at about five months; the others at term.

The placenta in the first case was spontaneously separated and taken away, after five weeks, without any inconvenience to the patient, save being kept in her house during this long time. When I delivered the afterbirth it was not offensive. In the first term case, I waited twenty-four hours then delivered a detached placenta, which was firmly adherent at the end of the second stage. The second term case was about fourteen months ago. I delivered the placenta, which was detached at the end of forty-eight or fifty hours. This was slightly offensive. This was a case in which I was called in consultation, and had not the sole charge of the case between the delivery of the child with forceps and the delivery of the afterbirth. I presume it was separated,

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and might have been delivered sooner. The convalescence in all these cases went on promptly and satisfactorily.

I have seen two other cases in consultation, in which there were frequent attacks of flooding, extending over several weeks after abortion, which were remedied at last by the expulsion of portions of retained placenta. I infer that these portions were adherent during these weeks. I also infer, the fragments being small, that if the entire original mass had been left the separation would have been more prompt, and the women saved from the severe and prolonged depletion from loss of blood.

In conclusion, I repeat, in case of absolute and uncomplicated adhesion of the placenta, it is better practice to watch vigilantly, administer the appropriate remedy, and wait for spontaneous detachment, than to hastily, at the end of six hours, introduce the hand into the womb and try to break up the adhesion. At best this can be but imperfectly done; the fragments left, together with the unavoidable injury by the manipulations, will be likely to damage the convalescence more than trusting to the wisely-aided efforts of nature.

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LVIII.

THROMBUS AS A COMPLICATION IN LABOR.

By J. C. Sanders, M.D., Cleveland, Ohio.

Thrombus signifies the extravasation and coagulation in considerable quantities of blood in the cellular tissue of different parts. In the parturient and lying-in woman its special seats are the labia, one or both, and the intrapelvic subvaginal cellular structures.

We will consider it as affecting these parts respectively.

A. As Affecting the Labia.

It is almost exclusively limited to one labium, but not uniformly the same one, for in one case the right, in another the left is found involved. Moreover, it predominantly occurs in the course of the second stage of labor, and generally immediately preceding the delivery of the child, and may become an obstacle more or less serious to the delivery of the head, which is always the presentation, so far as I am informed, whenever this malady occurs. Dr. Dewees gives a case, however, in which the labial thrombus was not detected until ten hours after delivery, and another in which the thrombus began in about one hour subsequent to a completed delivery. These serve to show that while labial extravasation generally precedes delivery, it does occur sometimes subsequently; but this must be regarded as exceptional.

Causes.—The proximate cause is disrupture of the capillaries, ramifying through and intermeshing the labial tissues. Whether

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these are dependents of the vestibular bulb, so called, or of the vesical plexus is perhaps impossible, and fortunately not important to determine. The probabilities are in favor of the latter, because of the great liability of this venous plexus, as well as the uterine, to varicosity and phlebismus.

The exciting cause is sudden and extreme pressure on the efferent vessels, unquestionably already varicosed and weakened, together with the sudden and tremendous impulse given the afferent arterial currents incident to the parturient tenesmus, though the extravasation does not seem to hold any necessary relationship, either to the severity or duration of the labor process. The œdema which sometimes affects the labia, one or both, in the gestative and parturient states, is probably a serous exudation from the same group of vessels, which in thrombus become broken down by the suddenness and intensity of the pressure and impulse to which they become submitted in the process of labor.

Symptoms.—The accident generally declares itself suddenly and unexpectedly. After the extravasation begins it transpires rapidly and varies in quantity all the way from furnishing a clot of the size of a filbert to that of an ostrich egg, and even larger, crowding the labium to its utmost distensibility, everting it, and rendering it massive, lobulated, dense, deeply livid, or almost black. The suffering varies with the degree of the extravasation. If this is not extreme the labial distress is insignificant; but if excessive, the suffering is great, even agonizing, from the terrible sense of weight and tension, and increases with the increasing accumulation. Fever sooner or later ensues with or without chill, and great restlessness and sometimes delirium. After the labium has become filled the extravasation may keep on and show through the meshes of the contiguous cellular tissue down into and accumulate within the perinæum, or swelling upward and backward be forced into the intrapelvic cellular structure and sacculate beneath the vaginal wall.

Generally the intrapelvic or vaginal thrombus has its source from the uterine venous plexus and is not connected with the labial clot.

In case of considerable extravasation there will appear symp-

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toms more or less sudden of concealed hæmorrhage, flagging of strength, faltering pulse, shock, pallor, nausea, vomiting, loss of vision, cold sweaty brow and hands, tossing, restlessness. Besides, there will be the phenomena, both local and general, of arrested labor; for the head, if unborn, may be barred from engaging and passing the vulva by the mechanical obstruction of the engorged labium.

Diagnosis.—There are but four conditions presenting any similitudes to labial thrombus. These are: 1st. Œdema. 2d. Hernia. 3d. Phlegmon. 4th. Bag of waters. In œdema the swelling is always gradual in approach, equable, and more diffuse, and, however extreme, never everts the labium affected nor darkens its normal color. With hernia we would always have a hernial history, for an inguinal hernia could hardly transpire with the abdominal and pelvic front so occupied by the uterus and child. Besides, in hernia the labium is not everted nor in any way discolored.

In phlegmon we would surely have an inflammatory history, and besides it could not occur in connection with the parturient state separate from some long-preceding external injury or violence. A phlegmon, moreover, would not evert the labium, nor render it livid, but bright-deep red rather, and before suppuration would impart a greater and more circumscribed density, and after suppuration a more pointed outline and softer fluctuation.

The membranes, unbroken and bagging at the vulva, would easily and always be distinguishable by their separableness as a bag from the labial and vaginal tissue, by their greater pliancy and ready fluctuation and absolute insensibility, and by their traceableness by continuity of surface upward, and perceived inclosure of the presenting part.

Terminations.—1st. The extravasation may be so limited as to prove no serious obstruction, being no more than an extensive or limited ecchymosis, and requiring little else than rest and regimen, the effused blood becoming fully absorbed. Absorption contributes largely to the relief in every case, however severe, as it is surprising how large the quantity is of extravasated blood which is sometimes found to disappear in this way.

2d. The extravasation may transpire so near the mucous sur-

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face of the labium and be so sharply circumscribed, as under the tension and impulse of an extraordinary pain to burst through the mucous wall, thus bringing about spontaneous and immediate relief.

CASE.—Mrs. M., æt 22, in good health, small in figure, but compactly built, had been in labor with her first child over twenty-four hours, the last six of which had been spent in wedging the head through the outlet, pushing off the perineal floor and engaging the vertex within the vulva. With these points gained there was an arrest of any further advance by something like a lump within the right labium which had formed quite suddenly, and seemed to be increasing. As such a thing was new in the experience of the attending obstetrician, and the fact of its existence had become known to the patient, it at once became a source of alarm; I was sent for in consultation and responded immediately. On examination I found, in the right labium, a lump the size of the largest hen's egg, with the history as just given. The labia were small, and so the thrombus, though not large, was sufficient to bar delivery, though there was nothing wanting in the force of her pains.

Incident to my examination, and probably provoked by it, while I was deliberating what course I should pursue, a pain of great violence ensued which discharged the clot right into my hand and thus delivered the head. The next pain completed the delivery, and all difficulty at once passed away. She convalesced without any drawback or hindrance, and has since borne one child in a labor in all respects natural.

3d. The extravasation may transpire so deeply within the labium, and spread out so broadly, as not to be capable of spontaneous discharge except by sloughing, in which case we would encounter imperilling local and general symptoms.

4th. The extravasation may prove so grave in quantity as seriously to impair the strength, and, associated with the attendant fatigue and shock, greatly endanger the life of the patient.

The following case, kindly furnished me from the experience of Dr. R. B. Rush, of Salem, O., is submitted as a forcible illustration of this mode of termination.

CASE.—Was called to see Mrs. W. at 8.30 P.M. Found her

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sitting in a chair; pains hard and regular. Requesting her to lie down, and instituting an examination, I found a tumor-like enlargement in the left labium as long as an ordinary fœtal head. On making further examination found the os nearly dilated, and head in the fourth position. Ordered counsel, and sent for my forceps. Incident to a desire to relieve her bladder she rose from the bed and walked to the vessel for that purpose. I had left the room temporarily but returning in a few moments after I was startled to see and hear a torrent of blood strike the floor with terrible force. Understanding the calamity I immediately ordered her to bed, and, placing my hand on the labium, found an I-shaped rent, one and a half inches in length and one and one-quarter inches in counter direction; the labium was entirely emptied, the amount of blood lost having been great. By this time my counsel arrived. The os being fully dilated, pains light, and head not descending, and patient very weak, fearful of a farther loss of blood, we decided to apply the forceps. In a few minutes the child was delivered stillborn. The patient rallied and in about half an hour the placenta was removed. Reaction did not continue, however, for she gradually sank and, in just three hours from the time of my first entering the house, died.

B. As Affecting the Intrapelvic Structures.

When thrombus occurs in structures other than the labial its special seat is the subvaginal cellular tissue predominantly behind and lateral to the posterior wall, the greater abundance and looseness of this structure here favoring accumulation and sacculation in case of vessel rupture. It is almost universally a postpartum accident, but follows close, however, upon the labor process, and seems to depend on it as a traumatic cause, though holding no necessary relation either to severity or duration of labor.

Phenomena.—The patient soon after, or hours after, completed labor, experiences an extraordinary weight and painful pressure within the pelvis and low down in the back. The distress somewhat copies afterpains, but is associated with more weight and sense of distension, and as the accumulation increases the dis-

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tress becomes extreme, even to agony. Unless relieved by art, febrile symptoms will very soon set in, with or without chill, and great restlessness, though the local suffering may compel the patient to lie like one with peritonitis. The urine is prone to be retained. If the extravasation be extensive there will be added the symptoms of corresponding blood-loss, sufficiently outlined in the description before given. Tactile examination reveals the vagina more or less occupied with a tumorlike mass, dense yet quaggy, and varying in size with the amount of extravasation. The finger can generally be passed anteriorly or laterally to the mass, but not posteriorly, except for a short distance from the ostium, without pitting up against the overprojecting ledge of the thrombus. The extent of the extravasation is limited only by the capacity of the excavation and the ability to resist blood-loss on the part of the patient, for it varies all the way from a few ounces to pounds of blood.

Diagnosis.—There are but four mal-conditions in any way liable to be confounded with this malady. The unbroken membranes of another child, in case of twin labor, would only very imperfectly simulate it. The condition of the abdomen and of the womb within, supplemented by a tactile vaginal examination, would, however, immediately clear away any question of doubt. Inversion would more closely approach it, but the presence of the uterus above the symphysis presenting its normal globose or rounded outline, and the peculiar character of the mass itself, admitting the finger only on one side or in front and not on the other, up along the long axis of the vagina, together with its density, especially its fixedness under palpation, would remove all suspicion of inversion.

Cystocele, forming as it does a tumorlike projection into the pelvis, bearing downward and backward the anterior vaginal wall, copies somewhat this accident; but its relations to the bladder is determined by the group of symptoms centred chiefly on the urinary function, and that the tumor in case of cystocele is always in the anterior wall of the vagina, while in thrombus it is always posterior or lateral; besides in cystocele the tumor is yielding and responsive to pressure, while in thrombus it is dense, firm, and quaggy, rather than fluctuating; and in cystocele,

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moreover, successful catheterization immediately reduces the tumor, while in thrombus this would relieve the pressure, but have no other effect on the tumor either to materially change its position or bulk.

A rectocele might, in like manner, forming as it does a tumor-like projection into the pelvis, and bearing forward and downward the posterior wall of the vagina, copy rather closely a thrombus, but its history is always chronic, and a rectal examination would clear away all doubt at once.

Prognosis.—This will vary with the amount of the extravasation, the extent of the lesion, the general strength of the patient, and the promptness and skill of our art and medicine. Patients have died directly from the blood-loss and shock; others, surviving the blood-loss, have succumbed to the subsequent inflammation, sphacelation; or toxæmia, yet it may be safely said that the malady is in the main amenable to prompt and skilful treatment.

Treatment.—Could the real condition of the vessels of the pudenda and pelvic viscera, prior to the occurrence of these cases of thrombus, be positively known as absolutely existing, a condition which doubtless is one of varicose engorgement, and which has crept slowly and imperceptibly on with the completion of the gestative period, prophylactic regimen and therapeutics would probably be able always to anticipate and thwart the attack. But as such a condition of the vessels cannot for a certainty be known or positively be distinguished by any subjective symptoms, no specific prophylactic management can be here indicated which is not proper and safe for all to regard who enter the gestative state.

In the direct management of the labial thrombus which anticipates delivery, the utmost promptness is demanded. As soon as the true nature of the case can be determined and it is clear that the thrombus is of a size seriously to obstruct or embarrass the exit of the head, or threatens the disrupture of the labium, the clot should be at once opened down upon by a bistoury or lancet and discharged, imitating what is sometimes spontaneously accomplished. The incision should always be made longitudinally, with the labium and through the mucous surface, and with a care not to

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wound the pudic artery hugging the ischiatic ramus, or the bulb of the vestibule. This cut should always be ample enough to allow the disburdening of the labium, without the necessity of much squeezing or pressure. The advantages of a prompt and free opening are: 1st. The saving of the labial cellular structure, liable and easy to become extensively and irregularly broken down by the mechanical force and accumulation of the clots, and the greater liability therefrom to septicæmia, so incident to a tardy and incomplete evacuation. 2d. The removal of an obstructing cause. 3d. If with this removal there is not sufficient force to effect delivery and a resort to art is adjudged necessary, the forceps or other means may be safely used, which with the thrombus undischarged would be impracticable. 4th. This ample and early incision protects against further accumulation and sacculation in the direction of the perinæum, and in case of subsequent inflammation, inseparable from much disrupture of the labial tissues, would permit easy and unobstructed discharge.

In case, however, there had occurred a spontaneous rent, and this was adequate, with a little care, to admit the discharge of the clot or clots without undue or severe pressure, there would of course be no necessity for artificial incision, except it might be to prevent sacculation at some dependent point.

As soon as the labium is evacuated of its clotted and fluid blood, whether spontaneously or by art, it should be treated with Calendula lotion, as better adapted to lacerated tissues than any other remedy, and be made subject to careful subsequent surveillance, that it be kept cleanly and free from ichor and fetor. In case the tissues had been much broken down, and these, with retained blood-shreds, had become disintegrated, yielding offensive and sanious discharges, as would be almost inevitable without some special treatment, no remedy could be found comparable with Bromine. It has a wonderful power to check the process of disintegration and correct its inevitable saniousness. A proper solution, say ʒi to a pint of water of an agreeable temperature, thrown as a spray upon and into the wounded labium by an atomizer, made thereby to pervade every part of the diseased structure, and this repeated once or twice a day, or even oftener, would subserve the use and purpose here indicated.

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The treatment of the intrapelvic thrombus, while not different in principle from that of labial thrombus, is entitled to special consideration. By as much as the structures implicated in intrapelvic thrombus are more vital, and their laceration and inflammation are more grave and imperilling conditions, the rule of prompt and free evacuation should be all the more scrupulously regarded. The motive is, therefore, 1st. To save any further breaking up of the subvaginal tissue. 2d. To relieve the terrible backache and severe sense of weight and tension, sometimes agonizing, incident to the extravasation. 3d. To guard against the retention of the imprisoned blood, clotted or otherwise, and the septicæmia so liable to attend on its disintegration and decay in contact with wounded tissues.

Though the sac made by the laceration should refill, this rule would still hold. In this case regimenal and remedial measures should at once be instituted for the abatement and control of the hæmorrhage. Inasmuch as the extravasation is primarily dependent probably on a greater or less varicosity of the entire vaginal plexus, Hamamelis should take high rank among the medicinal resources, though not to the exclusion of any other remedy more specifically indicated. Besides postural regimen, which in this as in every case of hæmorrhage is of the utmost importance, ice suppositories, if the accident has followed close on the labor and an immediate result is aimed at, or water, hot as the parts will bear, for a more permanent check on the loss, should it continue, would prove most valuable adjuvants. The subsequent care as to cleanliness and comfort, and protection against ichor and fetor in the character of the discharges, before made prominent, should be scrupulously regarded.

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LIX.

NOTES FROM AN OBSTETRICAL RECORD OF SEVENTY-THREE CASES,

DELIVERED IN PRIVATE PRACTICE, WITHIN A PERIOD OF EIGHTEEN MONTHS.

By J. F. Cooper, M.D., Allegheny City, Pa.

The nationalities of those attended were:

American born mothers,	. . . . .	61
German	"	4
Jewish	"	3
Irish	"	2
Scotch	"	2
English	"	1

The oldest was aged forty-four years; the youngest, eighteen years; the average age, twenty-eight years.

Of these there were:

Primiparæ,	. . . . .	25
Second births,	. . . . .	15
Third	"	10
Fourth	"	4
Fifth	"	7
Sixth	"	6
Seventh	"	2
Eighth	"	2
Ninth	"	1
Tenth	"	1

In the seventy-three confinements there were three sets of twins, all females, consequently seventy-six children:

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Males,						42
Females,						34
The longest labor was	37	hours,	24	minutes.		
" shortest "	1	"	10	"		
" average duration of labor was	8	"	29	"		
" longest first stage of "	32	"	40	"		
" " second " "	4	"	15	"		
" average of first " "	7	"	20	"		
" " of second stage of labor was			47	"		
" " third " "			21	"		

Vertex presentations,	68
Face "	4
Feet " (an eight months' child),	1
Breech " (a twin),	1
Compound head, hands, and feet presentation (seven months' child),	1
Unknown presentation (born before my arrival),	1

The forceps were used four times. The first required their use for forty-five minutes. The second thirty minutes. The third eleven minutes. The fourth ten minutes.

In all cases where the second stage of labor lasted over two hours and the patient's consent could be had, I have been in the habit of using the forceps, unless there is good reason for not using them. I have for several years abandoned the use of the old-fashioned long forceps, and use altogether small cast-steel forceps of less than eleven inches in length. They are very light and small, can be adjusted generally without changing the position of the patient, and weigh but eight ounces and twenty-three grains, troy. I thought them small when they were first procured, but in using them, I have found they always worked well, requiring little space for either application or carriage to place of use.

The first set of twins were borne by a vigorous, healthy woman of forty-one years. The labor lasted three hours and thirty minutes. The last child was born fifty-five minutes after the first.

The mother of the second set was a primipara. The labor lasted eight hours and forty-eight minutes. The second child was delivered ten minutes after the first. From the beginning of pregnancy the mother was a sufferer from chorea. During the first three or four months it was very violent, but less severe as

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pregnancy advanced, because it undoubtedly hastened, and in a measure complicated, labor. The child born first died nine hours after birth. The second still lives, and is now over seven months of age and hydrocephalic. The other set of twins was born at seven months. The mother was a vigorous person of nineteen years of age.

In this list there were two cases of puerperal peritonitis and one of puerperal metritis, but no deaths of mothers.

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LX.

CARCINOMA OF THE CERVIX UTERI COMPLICATING LABOR.

By Corresta T. Canfield, M.D., Titusville, Pa.

Malignant ulceration, or a cancerous condition of the cervix, does not, unfortunately, always prevent conception. These lesions, always regarded with fear under ordinary circumstances, but enhance the misery and anguish of mind a pregnant woman must endure, who is conscious of the nature of her malady and of its inevitable termination. No greater misfortune can befall her than gestation, which awakens the hitherto torpid condition of the diseased tissues into new activity, and degeneration progresses with increased rapidity. During labor dilatation of the cervix is effected at the expense of the healthier tissues, rendering them liable to laceration and producing inexpressible agony. It has been my sad fortune to attend one of these distressing cases of labor. May I never be called upon to witness another.

Mrs. M., aged thirty-six, dark hair and eyes, sallow complexion, nervo-bilious temperament, mother of five children, two of whom died in early infancy, came to me in June, 1873, for advice concerning attacks of sick headache which appeared at irregular intervals, but most frequently near her menstrual periods. She had been subject to these attacks since puberty, and considered them hereditary. There was also a profuse leucorrhœa. An examination revealed the uterus enlarged and indurated, and the os margin nearly covered with a granulating ulcer. I informed the patient that the headaches were dependent in no small degree upon the uterine lesion, and gave her various remedies as appeared indicated. Arsenicum relieved her most; oc-

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casionally Nux vomica or Belladonna would control the pain and nausea better. Sepia was also given in the higher attenuations.

Eighteen months subsequently I found the uterine lesion in a worse condition than before. The patient experienced no pelvic pain, but had noticed a thin, brown, offensive discharge following the menses. The uterus was now much enlarged and indurated, with the entire cervix denuded of its mucous coat, granulating and bleeding at the slightest touch.

For four months I applied Nitric acid solution, or Glycerole of iodine locally, and administered Sepia, Sul., Ars., and Lapis alb., as the indications varied. Lapis was given daily for three months. Her general health improved, and the headaches becoming less frequent, she abandoned treatment and for two years was comparatively comfortable. Then her health failed again and she resorted to the Hot Springs of Colorado for relief. She remained three months and returned apparently benefited, but the improvement lasted only a short time. She was now thoroughly discouraged and resolved to take medicine only when suffering unusually. The brown, offensive discharge was constant. The disease was evidently progressing.

In September, 1877, she ascertained she was again pregnant and at once despairing of surviving her confinement, made all the arrangements for her death and took medicine very reluctantly, as she considered all treatment useless.

The membranes ruptured spontaneously about 10 o'clock P.M., Sunday, July 7th. When called I found her suffering no pain but in an anxious state of mind. An examination revealed the os uteri dilated sufficiently to ascertain a vertex presentation, first position, the vagina hot and sensitive. Two-thirds of the os margin at the right side was ragged and excavated, and in such a disorganized condition that it would have torn as easily as damp brown paper of the same thickness. The left third of the cervix was hard and nodular.

The patient was sleepless all night but free from pain. At 4 P.M., of the 8th (Monday), weak pains came on, which gradually increased in severity. At 8 P.M. I was sent for, and found her suffering the usual pains; during the intervals she com-

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plained of a sore, burning distress. This rapidly increased as labor progressed, accompanied with high fever and occasional severe chills. Her agony became terrible to witness, but was borne with patience and fortitude. Her temperature was not taken during labor, but from experience I think it could not have been less than 103°.

When the cervix was a little more than half dilated the head came down rapidly, forcing its way through the disorganized tissues and lacerated the cervix in spite of my efforts to prevent it. The patient was delivered about 5 A.M., Tuesday, 9th.

The placenta followed the birth in a few minutes, and the uterus contracted well. Ten minutes afterwards, one of the most severe chills I ever witnessed came on, accompanied with the most intense pain and congestion to the head. Bell. relieved the head, but then followed nausea, cold perspiration, and other symptoms of hæmorrhage. Placing my hand upon the uterus I found it somewhat enlarged, but pressure with appropriate remedies soon reduced its size. The after-pains were almost unendurable, and during the intervals she still complained of the burning and soreness, especially to the right side of uterus. I again placed my hand upon the hypogastric region, and found the uterus was well contracted to its usual globular form, but to the right of it a soft compressible body could easily be distinguished. This I believed to be blood which had escaped into the abdominal cavity through the torn cervix and tissues adjoining.

The pain was so agonizing that I gave one-eighth of a grain of Morphia every three hours until relieved, also Aconite and Arnica, with compress wet with Arnica solution upon the abdomen. On Wednesday morning I found her quite comfortable, being still under the influence of the Morphia. High fever continued, abdomen was tympanitic, temperature 102°, pulse 110. Continued Aconite and Arnica. The evening temperature was 103°, pulse 120. Gave Tinc. verat. viride, 10 drops in six teaspoonfuls of water, a teaspoonful every two hours. The second dose produced nausea. The temperature and pulse were somewhat reduced, but the pain was increasing, with great distension and tenderness of the abdomen. She now located her pain chiefly

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in the epigastrium. She passed a restless night with temporary delirium.

I requested counsel and the husband called in two other physicians who took charge of the case. She lived twenty-four hours after passing into their care.

No post-mortem was made, but I am very confident that the uterus was lacerated from the cervix upwards, allowing the blood to exude into the abdominal cavity, producing a rapidly fatal metro-peritonitis.

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LXI.

STOMATITIS MATERNA.

By Millie J. Chapman, M.D., Pittsburg, Pa.

This affection appears less frequently than some others, but may become one of the most interesting diseases that complicates pregnancy or lactation. Its manifestation in many forms and complications renders its description difficult and the treatment varied.

Nothing new concerning the ætiology has been ascertained since the subject was presented to the Institute several years since by Dr. Dudley. Then, as is believed by many now, it was thought to be dependent upon a scorbutic cachexia; scrofula, miasmatic influences and menstrual irregularities only being concomitants, not causes. Evidently it cannot result, as some writers attribute, from the peculiar irritation which the acts of nursing produces upon the digestive organs, since it appears during pregnancy before this irritation exists.

The variety of theories concerning its nature, the limited literature on the subject with the infrequency of the disease, has often embarrassed the practitioner when meeting a severe case. Recognizing its resemblance to scorbutus and employing remedies used in that disease, greatly facilitates the treatment.

Being a disease of debility, it produces great suffering. It usually disappears on weaning the child; this, however, should not be resorted to unless the child's health begins to fail, and the mother's suffering increases.

All the cases coming under my observation have been attended with an aphthous ulceration of the os uteri. Some have been mild cases yielding readily to treatment, others seeming very

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intractable. It may occur during every pregnancy or lactation, seeming in some persons to be constitutional. It is a condition controlled quite as much by diet, care, and hygienic influences as by the remedies administered.

Fruits, acid drinks, buttermilk, onions, cabbage, lettuce and other vegetables, fresh air and cheerful surroundings are all highly important.

The remedies most useful in my hands have been the acids Nitric, Lactic, Carbolic and Sulphuric; Hydrastis, Baptisia, Mercury, and Sulphur.

The following cases present about the usual variety that occurs in this disease:

Mrs. S., æt. 24, primipara, scrofulous habit, weak and nervous, suffered from pyrosis, hæmorrhoids, and hysteria during pregnancy. Labor lasted thirty-six hours. Aside from a rigid condition of the parts there was nothing abnormal. She made a slow recovery and about the middle of the sixth week after labor was attacked with stomatitis.

At first there was a fiery-red appearance of the entire mucous membrane of the mouth followed by aphthous patches, which seemed very superficial. She complained of a continual stinging-burning sensation and the surface was so very tender as to make it impossible for her to partake of any solid food. Drinks were not objectionable and warm drinks particularly grateful. The nervous system was greatly disturbed; she had epigastric pain, constipation, and retention of urine at times, and pruritus was severe. A diet of rich soups, daily exercise in the open air with the use of Hydrastis, was followed by a slow recovery.

During two pregnancies since, the disease has returned, each time yielding slowly to treatment.

Mrs. W., æt. 32, fourth child. During the last half of pregnancy was seriously afflicted with stomatitis. A few weeks before her delivery strawberries made their appearance, of which she ate largely. Her symptoms soon changed for the better, the disease disappearing entirely during the whole season of that fruit.

About this time the child was born. Before she left her room the stomatitis returned in a severer type than at first. Her

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appetite was poor, her digestion imperfect, and she had a peculiar anæmic appearance; all food caused intense suffering, buttermilk agreeing with her better than anything else. A nourishing diet was given, consisting of rich soup, beef tea, eggnog, and, when they could be taken, fish, or mutton-chops.

Various remedies were administered, Lactic acid affording most relief. A moderate degree of health was attained but her mouth was never well until the seventh month, when she was induced to wean the child and the disease disappeared as if by magic.

Mrs. M., æt. 35, fifth child. Removed to West Virginia when three months pregnant. Living some distance from a town, supplies were not easily obtained. Corn-meal bread and bacon was the principal diet. Obliged constantly to overwork; she was exceedingly homesick, often ill-treated by a dissipated husband. She struggled along until the middle of the eighth month when she was attacked with stomatitis, appearing first in the form of vesicles, which after a short time burst and developed into deep-seated ulcers. These were situated on the sides, upper and under surface of the tongue, gums, inside of the cheeks, throat and fauces, the roof of the mouth being free. In some places on the gums these ulcers dipped down to the bone beneath. There were several ulcerated spots on the side of the neck. The skin was harsh and dry. The disease increased until two weeks before her labor, when she was brought home. Then I first saw her. At this time diarrhœa set in, with considerable fever every day. By a complete change of surroundings, good care and a nourishing diet to aid the action of remedies, she was partially relieved before confinement.

Labor was normal and afterwards the improvement more rapid.

The milk seemed to poison the child, hence weaning was resorted to early. Lemonade, or rather lemon juice and water, no sugar, was used freely; onions, cabbage, lettuce, potatoes, carrots and other vegetables formed the diet for some time.

Several remedies were given as the indications varied, Baptisia being of great service.

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LXII.

ECCYESIS.

IMPERFECT FŒTATION PRODUCED IN SOME ORGAN EXTERIOR TO THE UTERUS.

By C. Ormes, M.D., Jamestown, New York.

Of extra-uterine fœtation Good makes three distinct species: *ovarian, tubal, and abdominal* exfœtation.

Cases are on record of unquestionable authority substantiating all of the above species of extra-uterine fœtation, of which some remarkable instances are given.

Dr. Baillie (Philadelphia *Times*), reports a case in a girl of thirteen, where were found a substance, hair, and the rudiments of teeth, with an infantine uterus, and perfect hymen. The whole unconnected with impregnation, and attributed to "premature development of sexual organization, or power."

Another of the abdominal species, developed in a male child of fifteen months old (Young's *Med.-Chir. Trans.*). The child died after a tedious and painful illness. The body was opened and cyst examined; the substance it contained had unequivocally the shape and character of a human fœtus.

In the consideration of these cases the conclusion is that neither of them were responsible for any circumstances which in any way contributed to the development of their pathological condition, but were evidently the result of imperfect development of the embryo. Perhaps both were the result of the same impregnation, the one ovum cast off being healthy and vigorous, the other imperfect or defective in development, was embraced or encircled by the one of healthy physical development and nourished and sustained in the abdominal cavity of the healthy fœtus

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until the further development was arrested for want of sufficient nutrition, and consequent death of the imperfectly developed embryo. From that time it became a source of irritation to the living child from birth to its death, and like Paul, was constantly exclaiming *physically*, "Who shall deliver me from the body of this death!"

In support of this theory it has been proved beyond a doubt that from female quadrupeds while in heat, one or more ova pass off from the ovarium whether she receives the male or not; and in the body of a young lady who died suddenly after coition, upon dissection were found five or six vesicles passing forward in one ovarium; in another, seven days after coition, in the right ovarium was a slight raised torn surface which led to a cavity filled with coagulated blood, surrounded by a yellowish organized structure; a minute spherical body, supposed to be an ovum, was concealed in the cavity of the womb.

From the cases above referred to we are well persuaded that two or more ova are impregnated at the same time; that one may be more fully developed in growth and vitality, and surround or envelop the rudiments of the more feeble embryo, and that one may mature fully while the other has an imperfect growth in the abdominal cavity of the stronger, where it remains for an indefinite time. Then for want of sufficient maternal nourishment it dies and remains in its prison walls, a constant source of irritation and absorption, becoming master of the situation in the death of its foster parent.

In this place we would inquire, from what does the fœtus receive nourishment? and in Fallopian pregnancy? What in place of the placenta and umbilical cord? Would not the same vital forces sustain an ovarian or Fallopian pregnancy that sustain and nourish an ovarian tumor or cyst, and receive growth and live structure of anatomical peculiarities of the particular functions involved? While the one would die or cease to be developed in its true functional organization; while an ovarian growth would continue to develop without either nerve or organic structure.

This would seem to contradict the common theory that supposes the fœtus to derive its blood nutriment and oxygen from the mother by means of the placenta and umbilical cord. Fœ-

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tuses of large and full growth have been found in the womb and were brought forth at a proper period without any placenta, or at least of any utility, or any umbilical cord, or even the trace of an umbilicus.

In the case of extra-uterine fœtation, and admitting the above facts to be the ordinary provisions of nature, what is the substitute she employs on these occasions, the means by which the bereft fœtus is supplied with air and nourishment?

In tubal and ovarian pregnancies the fœtus seldom lives beyond the second or third month, when the mother is to die in consequence of inflammation or hæmorrhage from the ruptured sac. At this early period all writers agree that it is "impossible which, if either, form of extra-uterine fœtation exists."

The woman may recover and remain comfortably well, and more especially in abdominal fœtation.

At the death of the fœtus the amniotic fluid is absorbed, the fœtus becomes indurated, petrified or transformed; the cyst becomes fibrous, cartilaginous or osseous, and all form a solid tumor, remaining in the abdomen an indefinite period without special injury. Or at the time of the death of the fœtus, decomposition may be the result, the sac be filled with pus, the fœtus become fetid, the cyst adhere to some of the surrounding viscera, the intestines, perinæum, vaginal or abdominal parietes, through which the fœtus may be discharged. I saw a lady in a distant town,—fifteen months after confinement,—in consultation, who was delivered of a full-grown babe at full term and had a protracted and very tedious delivery. The abdomen remaining very large a lady present suggested to the physician in attendance the presence of another child; the doctor assured her there was not. The patient had had a bad getting up at the time of my visiting her. I found extensive abdominal inflammation, suppuration had taken place, rudiments of an apparently full-grown fœtus were from time to time working through the vaginal walls near the rectum, and the radius of one forearm came through the urethra; perfect occlusion of the vagina; no vaginal discharge after the first four weeks.

The woman died in about ten days. No post-mortem was held.

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Diagnosed true uterine pregnancy, with extra-uterine fœtation lodged in the cul-de-sac of Douglas.

Happily for mothers, extra-uterine fœtations are of rare occurrence. I have met with only one case in a practice of over forty years, and that complicated with an ovarian cyst. The extra-uterine fœtation probably had existed, from the history of the case, for over five years; she first noticed a pelvic tumor, which, after a few months, ceased to grow. Three years after noticed a perceptible enlargement of the abdomen; consulted me some two years after. On examination I diagnosed an ovarian cyst, occupying abdominal cavity, with a hard tumor lying in the brim of the pelvis, which presented to the finger through the vaginal walls, a cartilaginous bony feel; uterus on floor of vagina, fundus in hollow of sacrum, urinary bladder lying immediately above the uterus; catheter in bladder pointed to the sacrum below the projection; frequent urination, amount seldom if ever exceeding one gill; claims menstruation had always been regular, except had once or twice been protracted for a week or two, from taking cold; had suffered for the last year from pain of head; eyes red and suffused; more often requiring twelve hours sleep in twenty-four than less; melancholic and wished to be alone; bowels invariably constipated.

On laying open the abdomen and evacuating it, a large cyst was found occupying its cavity. On further exploration a hard horny tumor was found lying coiled up in the brim of the pelvis, resting in the hollow of each ilium, and requiring almost my whole strength to raise it from its bed; came up with a thud, as though confined in too narrow a space for occupancy, but were only adhesions to the pelvic bones on which it nestled or rested.

On dissection the tumor presented the appearance of having been coiled up, and proved to be a case of extra-uterine fœtation of the Fallopian tube, the head most fully developed. The body and limbs were mere rudiments of bone, cartilage, and broken-down tissue, showing what nature designed, but failed in the structure.

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APPENDIX.

DISCUSSION.

FOURTH DAY—MORNING SESSION.

DR. KREBS: *Mr. President and Gentlemen:* In regard to the paper of Dr. Gause, I most respectfully differ. I would hesitate to leave an adherent placenta so long to nature. Two cases have come under my care; one was in the clinic in Berlin. The patient was attended by a physician in the city. She had three faintings, and was almost bloodless when they sent to the institution for a physician to deliver the placenta. When I arrived the placenta had been delivered, but, with a little piece of it left behind; there was a part of it wanting, about the size of a quarter of my fist. The placenta had been literally pulled away, torn off by main force, and the woman continued to flood. What was to be done? There was certainly no time to waste, as she would have died very shortly. I requested the physician to chloroform the patient, and then made an examination; it is no easy matter to find a torn-off piece of placenta in the cavity of the womb. Yet, by careful exploration, without any violence to the uterus, I did find that piece. The very moment that my hand entered the uterus, of course, by its presence there, the flooding ceased. I then manipulated carefully; it took me from ten to fifteen minutes before I brought away that piece of placenta; then, by the proper agitation and friction of the womb, it contracted, and the life of the patient was saved.

The second case was in Boston. The attendant physician unfortunately possessed a large hand, which is a great obstacle. He had tried pressure, had tried to press out the placenta and in doing so, tore off the cord; then he was at his wits' end, yet he trusted to nature; this happened about three o'clock in the morning. He said there was no trouble at all, that the placenta would be thrown off, and everything would be safe; that he would go home, and see a few patients and call again. The woman lost a great deal of blood and when he came he found her

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anæmic, and at a critical point. She had fainted, and brandy had been given to revive her. He still trusted to nature, and he trusted till four o'clock in the afternoon, when the woman was almost dead. Then I was called. I immediately had the patient chloroformed, but met no trouble at all; the placenta lay almost in the vagina, and I delivered it at once. The woman survived the attack; but she immediately went into phthisis, and, as I have no doubt, in consequence of the immense loss of blood; now there are exceptions where we must act on the spot, and not wait.

DR. GAUSE: That is spoken of in the paper.

DR. KREBS: Concerning the paper on "Stomatitis," I would mention one remedy which may not be universally known, and which has helped me more than some of the others. I give *Phytolacca* in the sixth. I would ask you to make a trial of this remedy. It has been very successful.

DR. SANDERS: I will occupy your attention just one moment; I appreciate the delicacy of my position. It may seem discourteous to the gentleman on my bureau, and may seem extraordinary on the part of the Institute for the bureau to take exceptions in any way whatever to a paper furnished by one of its members; you may think that this might have been better done in the committee-room. But the subject is so inherently important, and the proposition urged is so counter to my conceptions in this matter, that I feel as if I could not let it pass. There must be a limit to justifiable delay, and the doctor, in his paper, admits this. Very well! Now what shall constitute the limit of this justifiable delay?

The mere statement that it is to be exclusively determined by the judgment of the practitioner, does not suffice. There are no data to guide the young doctor or the profession; no data whatever. Now, why six hours, rather than a longer time? Simply for this reason: First, it furnishes a reasonable time for the recovery from shock and for recovery from fatigue; second, it furnishes a reasonable time for the operation of therapeutics; third, it gives a reasonable time for the exercise of regiminal methods, and the operation of the coincident adjuvants for that purpose. All this we must have in view; fourth, and again, six hours brings us to the time where generally the os uteri internum, and sometimes the os externum, becomes closed, tonic contractions and spasmodic contractions. And the attempt even under anæsthesia to open the woman's os, tonically closed, has involved a traumatic injury. That is the point. Therefore if art is to interfere, let it interfere before you shall be barred, if it is possible, by the tonic contraction.

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Again, you are a loser, for, by the expiration of this time, these parts and the external parts, the vulvular parts, the pudendum, become sensitive and sore. You who have had any experience in handling these parts *post-partum* know how very tender these parts become even in a short period of time, half an hour, surely an hour, or certainly any longer time. They become so exquisitely sensitive that the woman fairly shudders at the mere thought of being touched, even for the adjustment of the body-pot, almost as sensitive as patients are with a fracture. Now, the idea of deferring this necessity of the interference of art until these parts have become thus tumid and tender, saying nothing about the damage to the vulva and the vaginal tract, seems to me very injudicious.

DR. GAUSE: May I say one word in defence of my paper? When a man's position in a paper is incorrect, it is right that it should be attacked; that is what we are here for.

Now, Professor Sanders certainly cannot have listened to my paper, nor does my friend from Boston touch it; he does not touch my case at all. I am careful to say that, if there is flooding, measures should be taken at the time, and I define what I understand by adhesion, and that prevents the flooding till the adhesion is broken up. The first case given was nothing but a case of adhesion; the other was a case of adhesion *in situ*, so that neither of these cases come up to the mark. Professor Sanders takes the position, in answer to my exceptions, as though it were a functional difficulty. It is not a functional difficulty, it is an organic difficulty. It is not the case of functional action as part of the very stage of labor; that is, we should use means to remove it. My experience in two cases that I have spoken of, and a third case after five weeks, justify me in saying and in recommending you gentlemen to wait, and that you will not have the complication of excessive tenderness that has been suggested here as possible in cases of functional difficulties.

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SECTION V.

REPORT

OF THE

BUREAU OF SURGERY.

GEORGE A. HALL, M.D., ... Chicago.
J. H. McCLELLAND, M.D., ... Pittsburg.
E. C. FRANKLIN, M.D., ... St. Louis.
S. R. BECKWITH, M.D., ... Cincinnati.
L. H. WILLARD, M.D., ... Allegheny City.
WILLIAM TOD HELMUTH, M.D., ... New York.
H. F. BIGGAR, M.D., ... Cleveland.
N. SCHNEIDER, M.D., ... Cleveland.
L. T. TALBOT, M.D., ... Boston.
JOHN E. JAMES, M.D., ... Philadelphia.
J. G. GILCHRIST, M.D., ... Detroit.
M. O. TERRY, M.D., ... Utica, N.Y.
A. G. BEEBE, M.D., ... Chicago.
W. M. L. FISKE, M.D., ... Brooklyn, N.Y.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME II. NUMBER 5.

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XXX.

PHIMOSIS AND PARAPHIMOSIS.

By W. M. L. Fiske, M.D., Brooklyn, N. Y.

The prepuce is frequently the seat of disease, both directly and indirectly, or by reflexion. It is only within a few years that some of these diseases were found to have an exciting cause in a phimosed prepuce, and it will probably be but a few years more when every boy with a congenital phimosis will be circumcised, be he Jew or Gentile.

Phimosis is divided into two classes, congenital and acquired. As the object of this paper is to impress upon the minds of those physicians who may hear or read it, the necessity or duty of circumcising every child requiring the operation, I shall dwell more particularly upon the first form and its attendant diseases. Circumcision, as you all know, is a very ancient operation, handed down to us by sacred writ as a special mark and ordinance of the Jewish nation, and is to us a proof of the wisdom and farsightedness of that divinity which shapes our ends, in that it not only puts a mark upon the circumcised, but gives him an opportunity for absolute cleanliness that he otherwise could not have. As the ancient Jews were not particularly virtuous, and openly permitted promiscuous intercourse, concubinage, and polygamy, it was also a wise provision of divinity to prevent the contracting and spreading of venereal diseases, especially syphilis. In proof of this last assertion we have statistics given by Jonathan Hutchinson, Surgeon to the Metropolitan Free Hospital, London, in 1855, though it had been frequently remarked by surgeons that the circumcised Jews were less liable to contract syphilis, as the membrane covering the glans becomes thickened, or more skin-like, from exposure and friction, consequently less liable during coition to abrasion and fissure, giving lodgment for syphilitic virus.

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During the year 1855 the total number of cases treated was 330; 58 were Jews, and 272 other nationalities. These were divided into the two forms: gonorrhœa, 107 Christians and 47 Jews, or nearly one-third; syphilis, 165 Christians and 11 Jews, or only 1 to 15, showing that gonorrhœa, the susceptibility to which is not affected by circumcision, was in great excess to syphilis, which requires a *broken* surface for inoculation. In 97 cases of syphilis in women 92 were Christians and 5 Jews. In view of the fearful spread of this horrible disease (a disease which Ricord asserts is *only* transmitted by the hard or Hunterian chancre, and yet says the wealth of the whole world would be no inducement for him to have a *soft* one), the question may well be asked, if circumcision will help to avert the spread of primary syphilis, and men will take chances, why not operate on all requiring it while young?

Hunter, Astley Cooper, and other eminent surgeons speak of phimosis as one of the exciting causes of cancer of the penis. The continual secretion and accumulation of smegma of the glandulæ Tysoni forms a hard, cheesy, and sometimes a chalky mass, back of the corona; this is a continual source of irritation, and ultimately produces malignant disease.

Among the reflex diseases produced by phimosis may be named nocturnal enuresis, seminal emissions, paralysis, chorea, and laryngismus stridulus. The study of the etiology of so varied an array of disorders necessitates a review of the nerves of the penis.

The pudic nerve arises from the lower part of the sacral plexus, and ultimately divides into two terminal branches, the perineal and the dorsal nerve of the penis. The dorsal is the superior division, and accompanies the pudic artery along the ramus of the ischium and between the layers of the deep perineal fascia; it then pierces the suspensory ligament of the penis, and accompanies the arteria dorsalis penis to the glans, to which it is distributed. This nerve gives off a cutaneous branch, which runs along the side of the organ; it is joined with branches of the sympathetic, and supplies the integument of the penis and prepuce, giving a large branch to the corpus cavernosum.

We see that the penis in every part is bountifully supplied

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with motor, sensory, and sympathetic nerves, so that an irritation at these terminal branches will produce characteristic troubles.

In nocturnal enuresis in boys we often find a prolonged prepuce with a very small orifice. This elongation is often the result of persistent pulling at the foreskin by the little sufferer, and the parent will inform you that every week or so the whole prepuce, and even the penis, will be very much inflamed and swollen.

The cause is an incomplete passage of urine. The meatus being larger than the preputial orifice, some of the urine is forced back and around the glans, consequently is never entirely voided, but remains, to be a source of irritation to the tender mucous surface, and the child is continually pulling at his clothes, or, if he can conveniently, pulls at the foreskin.

This same irritation is kept up as well when asleep, resulting in nocturnal enuresis, and no medicine, threatenings, or punishment will cure, as repeated cases operated upon can attest.

When a young man applies for treatment for nocturnal seminal emissions a great deal of vexatious delay in performing a cure can be saved, if at the first an examination of the penis is made (a duty neglected, I will venture to say, nineteen times out of twenty by the general practitioner), and if a decided phimosis exists correcting it by circumcision.

Dr. Lewis A. Sayre reports a number of cases of reflex paralysis cured by circumcision (*Virginia Medical Monthly* for April, 1877), children well nourished, and with no apparent exciting cause, except a decided phimosis. In one case of my own, upon operating for relief of laryngismus stridulus, a cure was made of a confirmed blepharoptosis as well.

Chorea, in some cases, has undoubted origin in an irritation produced by retained secretions in a phimosed foreskin, but to me the most remarkable of all these reflex diseases is laryngismus stridulus, the etiology having always been obscure, and usually ascribed to dentition, as the age when children are attacked is between the fourth and twentieth months.

Post-mortem examinations show the larynx in a healthy condition. Raue defines its pathological character as a "disturbed

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action of the nervus vagus or recurrens, either from central or peripheric irritation, both of an obscure nature."

Modern writers give no better etiology or pathology than the above.

Seven years ago I was called to see a child eighteen months old,—light complexion, large head, open fontanelles,—who upon the slightest provocation, either in being awakened suddenly, a loud word or noise, slamming a door, or crossing in any way, would excite a violent attack of laryngismus stridulus, which would frequently end in a complete convulsion. The former physician diagnosed correctly, and prognosed recovery if the child lived to the complete eruption of teeth. After seeing the child a few times the mother called attention to a habit the little fellow had formed of continually pulling at his foreskin. Upon examination I found a complete phimosis and very small opening. I advised and performed circumcision, as a simple hygienic measure, little thinking of its effect upon the spasms, but to my surprise and gratification it made a complete cure. This case, of course, opened my eyes to the fact that dentition *alone* is not always the cause of this most distressing malady, and without detailing the others, as there is great similarity, I would state that since that time I have cured three cases by the operation, and that I have never as yet seen the disease in a female child. This may be a simple coincidence, but I speak of it for future observation by my confreres.

One cause of failure in curing some of these reflex diseases is in not making a complete cure of the phimosis.

Dr. Sayre mentions several cases where the success of the operation was considered a failure, simply because the operation in itself was not complete, and by operating again success followed.

For the cure of phimosis some operators advise forcibly drawing the foreskin back, snipping or cutting the mucous membrane parallel to the length of the penis, and dividing the frænum præputii. The great objection to this form of operating is the formation of cicatrices, which of themselves become a source of irritation, so that I prefer the circular operation, or, as it is understood, circumcision. In performing this I vary the regular method in this way: Drawing the foreskin forward, I cut off sufficient so that

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when it retracts the cut edge will be on a line with the corona glandis. Now slit up the mucous membrane parallel with the length of the penis, being careful not to slit up the urethra, as has been done by carelessness. Then carefully separate this portion from the glans, as it is almost always adherent, sometimes requiring careful dissection after the corona is all clear; then cut away from the centre each way to the frænum, leaving the frænum intact, unless it is attached too far forward, when it is best to cut it partly away, as it will interfere with coition in later years.

Now it will be found that the mucous and dermoid surfaces co-apt and require *no stitches*, as usually advised.

After clearing away the smegma which has accumulated in the cervix, and stopping the hæmorrhage with cold water, use simple dry dressing, which in the great majority of cases is all that is necessary.

The operation on an adult is the same, though the vessels may possibly require ligation or torsion.

It is frequently necessary in adults, when a concealed chancre is suspected, to slit up the prepuce, as advised by some authorities, but as it invariably leaves a deformity which has to be operated upon to remedy, it is best to make one operation and circumcise, even if the chancre attack the cut surface, for the liability to this accident is as great in one mode of operation as the other.

The condition known as paraphimosis is an accident, and occurs in this way: A partially phimosed prepuce is forcibly drawn back of the corona glandis. If allowed to remain so, the constricted preputial orifice impedes the circulation, tumefaction ensues, with effusion of serum and lymph, burying the constricted portion in a deep fissure. If allowed to remain, the strangulation produces ulceration and sloughing, and relieves the stricture, but of course with a great deal of suffering.

The physician is frequently called in to see a child in this condition. Boys, trying for the first time to emulate some of their playmates, forcibly draw the foreskin back, experience some degree of pain, become alarmed, and leave it in this condition, after, perhaps, making a few unsuccessful attempts at returning. Fearing, perhaps, to speak to parents, they let it go for twenty-four hours or more, and the physician is called in

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and finds this condition. We notice immediately back of the glans a prominent collar of mucous membrane, and back of this another of integument. Between the two is the constricted portion, in a deep fissure. The lower portion of the prepuce becomes enormously distended with serum, and is often two or three times the size of the glans, which it almost covers from below upwards, and viewed from the side looks like a double-headed penis. To reduce the parts to a normal condition it is best always to give an anæsthetic, as it is very painful and if a small boy a decidedly slippery operation; after an experience with one or two boys the operator will never attempt it without its use. After the patient is under the influence of an anæsthetic and upon his back, take the glans between the thumb and finger and compress until all the blood is out of it; then with a pencil put a little oil back of the corona; grasp the penis with the other thumb and finger and forcibly draw the foreskin forward, at the same time pushing the already squeezed glans back. This seldom fails in reducing the paraphimosis. If, after repeated trials, the operator is unsuccessful, he can pass a narrow bistoury or tenotome underneath flatwise, then turning, as in tenotomy, and dividing the stricture. But this is seldom necessary, as persistent, patient effort will almost invariably succeed.

The same directions apply to adult cases, whether the result of accident or disease.

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XXXI.

IMPOTENCE AND SATYRIASIS.

By J. G. Gilchrist, M.D., Detroit, Mich.

Impotence is a term used to indicate loss of control over some voluntary function; by common consent and long usage it now especially refers to loss of sexual power. Older writers sometimes employed the word interchangeably with sterility, but it is now essentially used as a masculine word, whilst sterility is feminine. Much discussion has always existed as to the exact condition meant, whether a loss of sexual power, procreating powers, or both. After giving the subject much thought I have come to the conclusion that the use of the term had better be restricted to indicate a defect in the secretion or composition of the semen, excluding all other purely physical or organic impediments to copulation. We know that there are many instances in which sexual congress can be had, the male apparatus being capable of erection and of sexual feeling even, but from some accidental or permanent defect in the semen impregnation cannot be produced. This is even the case in many instances of eunuchism, and surgical literature is full of instances in which castration, with the loss of both testicles, has not notably impaired sexual vigor and enjoyment. Instances are many in which the loss of the testes in those advanced in life has only been followed by complete loss of power and desire very gradually, and may be deferred for many months. The facts seem to justify the adoption of the definition that the inability to procreate (entirely without reference to impediments to coition), owing to defects in the semen, constitutes impotence. Much might be adduced in support of this argument did time or occasion demand it. Gross

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(*Surgery, ii*, p. 894) asserts that "the term 'impotence,' as I understand it, simply implies inability to copulate, in contradistinction to the term 'sterility,' which signifies incapacity to procreate." The authority is unquestioned, but our author admits the possibility of a different construction. We know of cases of hypospadias, and some of partial amputation of the penis, in which either penetration was imperfect or the semen was discharged outside of the vagina, and yet children were born of such union. In one sense, it is true, absolute incapacity for sexual congress would seem to justify the term impotence; but the pages of our textbooks are too full of instances of conception from a simple deposit of semen on the external female genitals to warrant a too unquestioning adherence to time-honored definitions.

Some authors have even gone so far as to include under this head irritability of the genital organs, causing rapid emission of semen, and the reverse when it is delayed, but as long as the semen is found to contain fecundating principles, and no barrier is opposed to its emission by occlusion or narrowing of the outlets, the condition can scarcely be considered one of impotence.

In considering this highly important subject, and one, withal, which has such a meagre and unsatisfactory literature, some embarrassment is met at the outset in arranging the order of our work. The following plan has been adopted with full knowledge of its imperfections.

Primarily we may consider impotence under two heads: As due to structural peculiarities, whether congenital or acquired, and hence permanent; of functional derangement, or temporary and acquired. Under the first head we will include malformation of the genitals, arrested development, mutilation, or congenital cerebral lesions. Under the second must be considered such conditions as injuries of the nerve-centres, morbid action, excessive venery, or general debilitating causes.

1. Permanent Impotence.

(*a.*) *Malformations of the genitals*, such as absence of the testicles, non-descent, or other conditions involving a total want of

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the secretory apparatus, must at once and ineradicably produce total impotence. Other malformations, whether congenital or acquired, may coexist with impotence, but do not necessarily cause that condition. We may enumerate in this list such conditions as absence of the penis, which, when a congenital defect, is usually, if not always, combined with similar defects in other portions of the generative sphere; extreme brevity of the penis may be associated with the same general defect; inordinate bulk, while it may render copulation difficult or impossible, is not a necessary indication of want of procreative power, and hence is not strictly a condition of impotence. The same might be said of morbid action involving the penis and scrotum, such as elephantiasis, carcinoma, or morbid growths, which all greatly magnify the size of the organ, but are not, *per se*, essential factors in impotence. Vierin's dissection of the penis, due to adhesions, or osseous or cartilaginous deposits, or changes in the septum or corpora cavernosa, are all simple barriers to coition. The fact must be remembered, however, that such abnormalities, of a congenital character, are frequently single features in a chain of similar abnormalities. In all such cases, particularly excluding, perhaps, all of an acquired form, the non-existence of sexual feeling and desire must be considered presumptive proof of impotence. In acquired cases, particularly in those who have enjoyed sexual congress prior to suffering from an accident or disease that will prevent copulation, sexual appetite must be considered only negative evidence, as habit may exercise a controlling influence and perpetuate a certain degree of sexuality without the power to procreate. The same remarks apply with equal force to malformations of the scrotum or its contents, and indeed to the whole generative sphere.

(*b.*) *Accidents* of various kinds, particularly those involving the loss of the testes or obliteration of the seminal ducts and vesicles, may produce permanent impotence; but all simple mutilations of the penis must be excluded from the category, with this reservation: Cases occur in which the utter impossibility of sexual intercourse gradually effects a loss of desire and atrophy of the essential organs. One case occurred in my experience that has never been reported, and is valuable in this connection. A

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shoemaker, under the excitement of religious frenzy, deliberately amputated the penis close to the pubis. Subsequently, futile attempts at sexual connection with his wife were made, and semen was discharged. *Pregnancy resulted*, and under circumstances that forbade any imputation on the chastity of the wife. In course of time his sexual passion, which was very strong and ungovernable, became weaker, and ultimately disappeared entirely; the testes atrophied, and no semen could be ejected.

Surgical operations have sometimes induced impotence, and a noteworthy case is recorded in the books that will bear repetition as a warning to us all. I quote from Helmuth, second edition, page 1131, as being at hand: "It was the elder Delpech, who had attained an enviable position among the first surgeons of the world, who performed the operation (for varicocele) upon both sides; and, unfortunately, included in the ligature the spermatic arteries; atrophy of the testicles occurred; the mind of the patient brooded over the terrible mishap, and his brain, crazed with sorrow and mortification, thirsted for revenge. He waylaid Delpech, who, unconscious of wrong and unmindful of danger, was pursuing his usual course of duty, and rushing upon him as he left his carriage, stabbed him to the heart."

Injuries outside of the sexual sphere, however, are not seldom succeeded by sexual debility with loss of function. Lesions of the cerebellum are particularly prone to cause impotence, but we must avoid error in referring to brain injury indiscriminately. Thus, injuries that are followed by irritation or hyperæmia of the cerebellum, are more likely to produce satyriasis than impotence, while the reverse obtains when anæmia is induced. Gall and Spurzheim unquestionably first directed attention to this fact, and however much they may be proved inaccurate in other respects, certainly none will question that animal life is seated largely in that portion of the encephalon. Hard students, who develop the purely mental man at the expense of the physical, are notably indifferent to the pleasures of Venus, but we meet exceptions even here. Instances occur in which the habitual sedentary habits of students induce an afflux of blood to the pelvic viscera, and a more or less irritable state of the sexual function. This must not be mistaken for virility, as examination of

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the supposed seminal fluid has frequently shown an utter absence of the spermatozoa, and more prostatic secretion than otherwise. Inasmuch as I purpose to return to cerebral conditions later, and as the *fons et origo morbi*, we will pass to our second division.

2. Functional Impotence.

By this term I mean temporary impotency, a condition that is acquired, not necessarily permanent, and which admits of cure in favorable cases. Among these conditions we find three natural subdivisions: one, including diseases of the sexual apparatus; second, those of the pelvic viscera; third, those of a general character, in which sexual exhaustion appears as a secondary or collateral affection.

(*a.*) *Diseases of the sexual apparatus* includes all that would have a tendency to forbid sexual desires from their painful nature, or other circumstances that might induce repugnance to the act. Under this head we find Dr. G. M. Humphrey (*Holmes*, v) includes hydrocele, spermatic cyst, varicocele, hæmatocele, and such diseases of the testes as orchitis, enchondroma, carcinoma, or cystic degeneration. Some of these diseases have a tendency to cause atrophy of the testicle; others promote some form of metamorphosis, which will destroy functional activity. Others, again will compress or constrict the seminal ducts, or some of the spermatic canals, while a few will induce disgust or indifference to sexual congress, which gradually becomes confirmed.

(*b.*) *Diseases of the pelvic viscera*, such as cystitis, lithiasis, and extensive hernia, may induce impotence from disuse, the sexual act being either painful or impossible, and thus the appetite may ultimately cease. In the early stages of vesical calculi, when there is much itching of the meatus, the frequent pulling and handling to which the prepuce is subjected will have the tendency to increase sexual desire; but as time goes on this peculiar irritability is lost, and the pain becomes so positive that no sexual desire can be excited.

(*c.*) *Diseases of a general character*, particularly those of an exhausting nature, very frequently present a notable diminution in sexual excitability, but not uniformly so. Thus phthisis pulmonalis at one time will present notable impotence, and at an-

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other as marked an increase of sexuality. Typhoid and typhus, the worst forms of scrofulosis, carcinoma, and secondary or tertiary syphilis, are usually characterized by loss of desire. Many of these conditions are undoubtedly productive of impotence, or at least loss of sexual appetite, from the anæmia necessarily connected therewith. There are other conditions of adynamia that are due to exhaustion, without necessary anæmia; even in some hyperæmia may exist. These are such as are due to abuse of the natural appetite, either by masturbation or excessive venery. Whilst simple abstinence may and does frequently produce a cure, yet when such habits are confirmed, and of long continuance, functional debility is ultimately succeeded by structural and organic change.

Mental exhaustion can hardly be included in any of the above subdivisions; it is of much importance, and a frequent cause of impotence. Apart from purely structural changes and physical causes, it can scarcely fail to be observed that all of the so-called functional sexual defects are due to innervation, which may be anæmia, or some other equally potent condition. Cerebral or spinal lesions, more particularly of the lumbar spine, are not infrequently the cause of priapism, but sexual excitement is not at all times connected therewith. Paralytic affections are noteworthy instances of the loss of sexuality from nerve lesions, and in all cases we are warranted in asserting, in view of all the facts, that interruption of nerve stimulus, or enfeebled nerve action, are the essential factors in functional impotence.

The numerous experiments made by physiologists would seem to be of a character to settle the question definitely, that all the functions of life reside in the nerve centres; that hyperæmic conditions must predispose, at least, to exaggeration of functional activity, providing it does not reach over into inflammation, and thus induce organic changes; reasoning by analogy, if no facts were accessible, anæmia must produce an opposite state of affairs, viz., depression of functional activity. It can only remain, therefore, to settle the locality of sexual instinct and feeling, to determine just what conditions must exist to produce impotence. Simple as this problem would seem, it is almost impossible to solve it, as records are not attainable. Thus experiments on the

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cerebrum seem to have been largely instituted to prove or discover the effect of lesions of volition; incoordination of the locomotor apparatus is the single result obtained, and from the fact that birds and cold-blooded animals have largely been used in the experiments, the sexual sphere has either received little attention, or the results obtained have been negative, conflicting, or ambiguous. In consulting a large number of works of surgery, even carefully and laboriously scanning the ponderous publications of the War Office, I have not been able to find a solitary instance in which the sexual appetite was noted, as charged or modified by injuries to the head. Letters of inquiry to the surgeon-general have elicited no information, simply the statement that no such records had been kept, and no data can be referred to. This inability has forced me to base my theory (?) upon a single clinical case, and partial observations found noted in many of our textbooks. In my case a man had sustained a gunshot wound in the back of the head, which healed slowly, only after considerable brain-matter had been lost. The portion suffering the loss was evidently the cerebellum. He at length fully recovered, but with symptoms of locomotor ataxia (it might be better to say the condition actually existed), but with mind unimpaired. Prior to his mishap he had been a man of strong sexual feeling, but from the date of his recovery remained perfectly impotent. The testes shrivelled, and no thought on sexual subjects, nor the least spark of desire, existed or could be excited. This constitutes all of my personal experience, and considering loss of tissue in some sense equivalent to anæmia I feel justified in my earlier statements. I do not say that our books do not contain allusions to similar occurrences, but they are few and valueless.

Without extending our paper beyond all reasonable limits it would be impossible to give minute attention to the many lesions in the nervous sphere that have a more or less direct influence on the sexual apparatus. The general assertion, given above, must be made to include all that our somewhat narrow limits will admit, and attention must now be paid to the important item of treatment.

The *treatment* of impotence must, in the nature of things, be

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medicinal and hygienic. I fear either method, if used alone, will fail in producing perfectly satisfactory results; both are of equal value, but if either is to be omitted by all means let it be hygiene. Care must also be exercised in the selection of cases; impotence due to malformation, injury of the genital apparatus, or of the brain or cord, must render the condition permanent and hopeless; when purely functional, and due to exhausting diseases or debilitating influences, unless so long continued that structural changes have taken place, a cure is nearly always within our reach.

Let us first consider the hygienic indications. As would naturally suggest itself to a person of ordinary common sense, all cases of sexual debility due to venereal excesses, demand absolute continence as a *sine qua non*. All stimulating food, particularly coffee, tobacco, alcoholic drinks, and the like, must be forbidden. The diet must be nutritious, the habits regular, and the mind diverted from all lasciviousness. Exercise in the open air must be enforced, and everything that experience has shown to be hurtful or that has a tendency to excite the sexual appetite, must be avoided. In a word, the condition being partly mental and partly physical, we must seek in every way to restore and maintain the harmony of the functions, to make good blood, and to preserve or restore healthy mental activity. As partly in the domain of medical treatment, electricity must not be overlooked. I am aware that while one class of practitioners are much opposed to the therapeutic claims of this agent and view with doubt and distrust all that is claimed for it, another errs as greatly on the other side and affects to consider it the panacea for all the ills of human kind. Whatever may be said of it in other relations, in the treatment of impotence, solely as an adjuvant, I believe it has done good service, and seems to be a very essential element of cure. It is used by faradizing the spine and post-cranial region, in a moderately weak current and with a rapid interruption. The attempt to produce healthful conditions by faradizing the genital apparatus will induce only negative results, as I think the application is then based upon mistaken conceptions of the seat of the morbid action. Good food, avoidance of stimulants, plenty of exercise, mental training, and a ju-

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dicious application of faradization, it seems to me, includes all the indications under the head of hygiene.

Medicinal treatment cannot be laid down with any satisfaction, as the indications vary in each case. In my own somewhat limited experience, I have relied more especially on *Graph.*, *Sulph.*, *Gelsem.*, *Phos. ac.*, and *Chin.* A few of the more common symptoms in the sexual sphere alone may be given, but I must enter a warning against prescribing in them alone, as in *all* cases a good prescription is one that is made on the totality of the symptoms, meaning by "totality" all departures from the standard of health as revealed by the various instruments used to aid in diagnosis,—thermometer, ophthalmoscope, etc., as well as purely subjective phenomena.

China.—Impotence from excesses; coldness and pallor of the surface, with exhausting sweats.

Graphitis.—Impotence, *still with erections*, but no sexual feeling, or the proper and ordinary secretions during coition. Tendency to herpetic eruptions, and gradual loss of sexual instinct.

Gelseminum.—Either complete impotence, or great loss of sexual vigor. In either case jaded and weary look, pallid; dragging gait; mind dwells on lascivious images, and irritable condition of seminal vesicles, with discharge of prostatic fluid. If semen is discharged, the spermatozoa are few, sluggish in their movements, and in many instances are entirely wanting.

Kali brom.—Complete loss of sexual desire, with defective memory, exhaustion, and nervous prostration; great melancholy.

Phosphor. acid.—Erections without sexual desire; sudden relaxation of penis during coition; great local weakness and formication of the scrotum.

Picric acid.—As a secondary effect, if the disputed provings of this drug are at all worthy of credence, complete impotence with loss of all desire, and atrophy of the genitals, should indicate its employment. I have no experience with it, however.

Sulphur.—Greatly relaxed genitals, with very offensive perspiration. Of especial value in "old sinners," particularly if habituated to alcoholic stimulation.

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SATYRIASIS.

This is a condition of extreme sexual excitement, due to local or cerebellar morbid action, usually acute and transitory, but occasionally chronic and persistent. The term is used to indicate salacity in the male, nymphomania being the analogous condition in the female. As impotence is probably due to cerebellar anæmia, it would seem that satyriasis must be caused by an opposite state of affairs, or hyperæmia, at least irritation. Indeed in the few cases in which *post-mortem* examinations have been secured in marked cases of this malady, some lesion of the cerebellum has been discovered, and even when accompanied by some considerable loss of tissue, the conditions were such as favored irritation, if not positive hyperæmia. One case is given by Gross (*Surgery*, ii, p. 893), from a report by Mr. Robert Dunn, of satyriasis following an attack of apoplexy in a man of more than fifty years of age. The condition existed until death, and an autopsy showed "the right hemisphere of the brain convoluted into a softened, pulpy mass, in the midst of which was a clot of blood the size of a hen's egg."

There is much apparent confusion existing as to the relation priapism sustains to satyriasis. Gant (*Surgery*, p. 1031) speaks of it as a symptom of vesical stone. Helmuth, Thomas (*Morbid Anatomy*), and Humphrey (Holmes's *Surgery*, v, p. 177), each allude to morbid erections due to extravasation into the cavernous bodies; but the essential feature of satyriasis is wanting, viz., increased sexual excitement. There may be permanent or frequent erections, with no sexual desire, but there can scarcely be satyriasis without priapism. We are fully warranted, I think, in referring the whole condition to spinal or cerebellar irritation, and excluding entirely all considerations of purely local abnormalities. The same paucity of material for forming an etiological scheme exists here as was found in the case of impotence; but such as there is seems to be strongly corroborative of the position just taken. Thus it is well known that effusions, whether sanguineous or serous, with the posterior brain, induce erections of the penis; that in congestion of the same organ, as in death on the scaffold, a similar condition is frequently noted; that myelitis and spinal meningitis are quite constantly marked by irritability

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and erection of the penis. From similar causes convalescence from exhausting diseases, notably, I am informed, in yellow fever, in which general irritation is marked even with pronounced anæmia, priapism and sexual excitement is very common. Occasionally the same thing is noticed in peritonitis, particularly when confined to or originating in the pelvic region.

Finally, it must not be omitted, the use of certain drugs, either for legitimate purposes or for the purpose of exciting a worn out sexual function, are occasionally productive of satyriasis. The list is well known to homœopaths, and embraces such agents as Canth., Picric acid, and others. Sedentary occupations, the habitual use of stimulating food or drinks, anything in fact, that would determine an increased amount of blood to the pelvic organs, must all be taken into account in determining matters of treatment.

In whichever way induced, when the disease is once established, the condition of the patient is pitiable. Sleeping or waking the thoughts are continually of a lascivious character, and the irritability of the sexual apparatus is so extreme that it requires the greatest caution of self-control to avoid assaults on females, even members of one's own family. Later even this control is lost, and, as gratification of the sexual instinct only adds to the difficulty, the case soon assumes characters of insanity, even to the extent of calling for personal restraint.

The *treatment* of satyriasis naturally calls for consideration of three sets of indications:

1. *Moral treatment*, in the early stages at least, is of the first importance. By directing the patient to avoid the reading of books or papers that suggest lascivious thoughts, pictures, theatrical exhibitions, and everything of an exciting character. The persistent application to absorbing work of some kind, or healthful reading, to direct the mind from the absorbing topic; in short, to avoid anything and everything that might have a tendency to direct the attention to such subjects.

2. *Hygienic* measures, such as avoidance of stimulating diet, active outdoor occupation, and the preservation of the bodily health by immediate attention to any trivial departure from the proper standard, must at all times occupy a prominent place. The one great difficulty in the way, in respect to both moral and

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hygienic treatment, is the fact that the condition is rarely recognized until so pronounced that more active measures are demanded. This is particularly true of nymphomania, from the natural modesty of women, but many men are equally reserved; and the case is presented to us in a confirmed form, perhaps with organic changes, making the condition hopeless.

3. *Medicinal* treatment, in both acute and chronic cases, is the main resort and chief reliance. The list of remedies is large, embracing more than time or occasion calls for notice at this place, as their administration must be governed by reference to the totality of the symptoms. Those more commonly indicated are as follows, according to Lilienthal (*Therapeutics*, p. 546): *Canth., Cann. ind., Hyosc., Merc., Natr. m., Nux vom., Phos., Picric ac., Stram., Sulph., Veratr.*

Cannabis ind.—Erections while riding, walking, and also while sitting still; violent, painful erections; illusions of fancy.

Cantharis.—Discharge of blood in place of semen; frequent painful erections, with ungovernable desire for coition; drawing in the cord, with testicles drawn up.

Hyoscyamus.—Furious satyriasis; exposes himself shamelessly, and tries to go naked.

Mercurius.—Lascivious excitement, with painful nightly erections; semen mixed with blood; sweat on the genitals.

Natrum mur.—Frequent seminal emissions in spite of incessant coition; dryness and heat of a pungent character in the genitals.

Nux vomica.—In persons of sedentary habits, in whom the sexual instinct is strong, not amounting to satyriasis perhaps, but coition is incomplete from sudden subsidence of the erection.

Phosphorus.—Sexual mania; strong erections, copious emissions, and followed by impotence. Like *Hyos.*, there is desire to go naked.

Picric acid.—Primary symptoms violent, strong, long-lasting erections, fearful that the penis would be ruptured; erections lasting all night; semen in immense quantities.

Stramonium.—Exalted sexual passion; lasciviousness; sings obscene songs; is noisy and loud; smells of semen.

Other remedies that demand study are: *Anatherum mur., Aurum met., Calc. c., Cann. sat., Eryngium aquat., Graph., Helon., Kali brom., Lilium tig., Mezer., Plat., Puls.*, and *Tarantula.*

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XXXII.

LITHOTRITY.

By A. S. Bebbe, M.D., Chicago, Ill.

The history of this operation is too brief to require much time in recounting it, or to be of very great interest except to illustrate the progress of surgical science during thepresent century, as compared with any similar preceding period.

Commencing with Civiale in 1822, it has rapidly risen, in the hands of Amussat, Leroy d'Etiolles, Heurteloup, Brodie, Fergusson, and Thompson, to the first rank, as one of the major operations of surgery. And when the Old World has achieved what has seemed to be very near perfection, it has remained for America to show possibilities and applications before unthought of.

While the ancient and noble operation of lithotomy has not been, and probably never will be, entirely superseded by its younger rival, it must be now considered as the exceptional, and not the ordinary method of cure in cases of vesical calculus in adults.

The advantages which are possessed by lithotrity over lithotomy are: first, greater safety; second, its less formidable character in the estimation of the patient.

Regarding the first point, it must be confessed that statistics are by no means accurately indicative of the relative mortality of the two operations, for the reason that the cases subjected to lithotrity are always selected, and embrace the more favorable ones, while lithotomy, at the present day, as practiced upon adults, is reserved for such as are not amenable to the milder operation, and hence is practically a selection of the worst cases.

On the other hand, among children, who are highly favorable

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cases for operation, lithotomy is the ordinary and nearly exclusive method, and this class constituting so large a proportion of stone cases, tends strongly to reduce the relative mortality from cutting. Statistics, therefore, to be of any value in determining the relative danger of the two methods, must compare the results of the two in patients of corresponding ages, and taken indiscriminately, without selection. As we have no such data, and probably shall never have, we must content ourselves with an approximate estimation of the results.

Inasmuch as nearly all crushing operations are practical upon adults, we will confine our inquiry as closely as possible to the period above twenty years of age. Nearly all reports of results from this operation—lithotomy—give merely the totals for all ages, but we find from the reports of the Norfolk and Norwich Hospital, from 1772 to 1869, inclusive, 161 cases from 20 to 50 years of age with 24 deaths, and 262 cases between 50 and 80 years with 58 deaths. Thompson, in his very elaborate analysis, shows that between 21 and 48 years, inclusive, the mortality was 1 in $8\frac{1}{6}$, while from 49 to 81 years, inclusive, it was 1 in $2\frac{2}{3}$. By the examination of Coulson's analysis of 2972 cases, we find that, approximately, the ratio from 20 to 50 years is 1 to 5, and from 50 to 80 years, 1 to $3\frac{1}{8}$ cases. By averaging these figures, and assuming that 50 per cent. more cases would occur in the thirty years after the age of 50 than for the same period preceding, we arrive at the conclusion that the proportion of deaths from all cases of lithotomy after the age of 20 years is about 1 in $4\frac{2}{3}$, or, at the least, 1 in 5.

On the other hand, as the results of lithotrity, we may refer to four of the most eminent English operators: Brodie, 115 cases and 9 deaths; Fergusson, 109 cases and 12 deaths; Keith, 129 cases and 7 deaths; Thompson, 204 cases and 13 deaths; giving a total of 557 cases with 41 deaths, or 1 in $13\frac{1}{2}$. Of these, at least 5 or 6 of Sir Henry Thompson's cases died from causes entirely disconnected from the operation, thus leaving strictly a mortality of but 4 per cent., which, doubtless, more nearly represents the present possibilities of the operation in skilful hands, and with carefully selected cases. What the mortality would be, were these same selected cases subjected to lithotomy, we can only conjecture, but it cer-

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tainly could not fail to be much greater, especially as in Thompson's cases, but 3 were under 30 years of age; the average age was 61, the oldest was 84, and 53 were 70 years old, and upwards.

Respecting the advantage which the crushing operation possesses in being less formidable in the eyes of the patient, but little emphasis has been laid upon this by surgical writers, although Key very clearly pointed it out more than forty years since, when the operation was in its infancy, and English surgeons had but just learned from Heurteloup the use of the lithotrite. Even were the operation as dangerous and as painful as lithotomy, it would be submitted to with far less hesitation, on account of the almost universal and profound horror with which the knife is regarded by patients. This had the effect to deter patients from consulting the profession in cases of suspected stone, or, if the diagnosis were established, to postpone as long as possible the dreaded ordeal, so that a large number were brought to the operating table only when reduced to the direst extremities, and when the chances for a successful issue were extremely slender. Lithotrity, on the other hand, has encouraged both patient and surgeon to the early recognition of stone, and thus to its easy and comparatively safe and painless removal by means of the lithotrite.

While lithotrity possesses these advantages over the older method in certain cases, it cannot be regarded as of universal application, nor as supplanting lithotomy entirely. In spite of all that study and mechanical skill may do to enlarge the domain of this method of treatment, and when all that may be has been done to educate medical men and patients to the early recognition or prevention of stone, there will doubtless remain some natural limitations to its applicability, so that the staff and knife will never be entirely laid aside, although they will be more and more rarely called into use. The introduction of the new method, as an alternative in the removal of calculus, has greatly increased the demand for accurate and early diagnosis, not only of the presence of stone, but also as to its character and origin, and the state of the urinary organs in general and particular. When there was but one surgical resource in such cases, it mattered little what was the character of the concretion, or what its size, or the

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state of the organs, so long as they were not so seriously diseased as to forbid any surgical interference.

But now it becomes a matter of the greatest moment that the surgeon should be able to accurately determine all the points which will decide his choice of the method best adapted to each individual case. Or, to use the words of Sir Henry Thompson, "now that we have two operations, it is very important that we should choose the right one, because, let me tell you, if you do not determine pretty accurately the character of the stone, and select the right operation, you may do more harm than if you cut every one. If you crush the very large stone and cut for the very small one, you will have greater mortality than if you simply resorted to the one operation of cutting in all cases." The selection of the operation, then, becomes a question of the highest importance, as it is also one demanding, sometimes, the most accurate knowledge and the most critical examination.

The most important points to be considered, in determining the choice of method, will be the patient's age, the condition of the bladder, kidneys, urethra, and prostate, the character and size of the stone.

First, then, as to the age of the patient. It may be assumed that, as a rule, any age prior to puberty should determine in favor of lithotomy, for the reason that the imperfect development and small size of the urethra, together with the irritability of the bladder and the restlessness of such patients, are extremely unfavorable to crushing; whereas the results of lithotomy in children are so favorable as to leave little to be desired. The statistics of lithotrity in children are very meagre. Sixty-two operations at the Moscow clinic resulted in six deaths. Guersant, at the Children's Hospital in Paris, operated upon thirty-five boys, of whom seven died, and three were afterward subjected to lithotomy, whereas of one hundred that he cut but fourteen died. Cheselden cut thirty-five children under ten years of age, with one death, and of fifty-eight children lithotomized at St. Thomas's Hospital, but one died. In the Norwich Hospital, of those under five years, one in twelve died; between five and ten, but one in thirty; between ten and fifteen, one in ten and one-half; giving twenty-eight deaths out of four hundred

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and eight cases, or an average of about one in fourteen and one-half. Coulson finds the mortality under ten years to be one in thirteen. Thompson estimates the mortality in children at not more than one in fifteen or sixteen; and again, that, "roughly speaking, not more than one death in twenty cases ought to occur among children, perhaps less." Gross lost but one patient out of fifty-two cases of lateral lithotomy under or up to the age of puberty.

It is conceded then by all, that prior to puberty, and possibly even to twenty years, lithotomy should be the rule; and if any are to be crushed they should be such as are small enough to be completely pulverized at a single sitting. What has been already said is intended to refer especially to boys. As in girls, if stone is found, the short and dilatable urethra will admit of extraction or crushing with comparative ease. For the present we must relegate to the knife cases of stone requiring operation in childhood, and this class will embrace nearly or quite one-half of the total.

As age advances the dangers from lithotomy greatly increase, so that the indications for the selection of the crushing operation become stronger and stronger, since the dangers from this method do not increase, at least not by any means in the same ratio as may be observed by inspection of some of the figures given above. Segalas lithotrized fourteen cases of eighty years and upwards without a death, and of twenty-seven septuagenarians he lost but two. Nevertheless, it is in the middle period of life that this operation has achieved its best results.

The rule should then be that for all adults the lithotrite should be preferred to the knife, the more so as age advances. While there are exceptions to this rule they are becoming fewer as surgical skill and experience increase.

Certain conditions of the bladder would, also, justify a resort to the knife; as, for example, a very irritable state of the organ, associated with severe suppurative cystitis, and especially if resulting in sacculated dilatation.

Sir Henry Thompson does not consider it necessary that the bladder should be able to retain more that an ounce or two of urine, although most writers consider from four to six ounces

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necessary for the performance of lithotrity safely. Neither does he consider, as some others do, an atonic state of the bladder objectionable, but rather favorable than otherwise.

Organic disease of the kidneys, such as chronic pyelitis, would necessarily render any operation exceedingly hazardous.

Enlargement of the prostate, so long as it does not prevent the introduction of the lithotrite (which as a matter of fact it seldom does), would not prove specially objectionable, though it may render the manipulation of the instrument rather more difficult. But since such patients are usually accustomed to the use of the catheter, the organs have often acquired a high degree of tolerance, and are thus in a favorable state for lithotrity.

An irritable urethra, and especially one affected by severe organic or resilient stricture, or one abnormally narrow from any cause, offers a serious obstacle to this operation; still all but the most obstinate cases of this kind may be prepared by continuous dilatation or evulsion, and thus the way be opened for the successful use of the lithotrite. The increased danger of impaction of fragments in such diseased urethræ, when they are not evacuated through a tube, should also be borne in mind.

The size and character of the stone may also have an important bearing upon the selection of the mode of treatment.

In determining the size of the stone a proper sound, graduated near the handle, may be sufficient. Gently passing the sound past the calculus until the beak of the instrument drops behind it when rotated to that side, it is then carefully rotated back to the perpendicular and withdrawn until the beak will drop down upon the proximal side of the stone, thus measuring its diameter provided the stone is not moved during the process.

The note elicited by the sound upon striking the stone would roughly indicate the volume, but the most accurate method is by grasping the stone gently in the jaws of the lithotrite. If the stone thus held be then rotated from side to side, a second stone, if it existed, would be readily discovered.

The size of the stone would not alone, however, be a conclusive indication, unless its character also was known.

According to the accepted principles of this operation, as stated by Thompson for example, a phosphatic stone, under two

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inches in diameter, may be, other circumstances being favorable, treated by crushing. Even uric acid calculi of moderately large dimensions may also be successfully treated in this way, whereas an oxalate-of-lime stone, exceeding an inch in diameter, would ordinarily be best removed by cutting.

These rules may require revision if the method recently proposed by Bigelow under the name of "Litholapaxy," or rapid lithotrity with evacuation, proves upon thorough trial to be as successful as it seems thus far to have been in his own hands. Employing a larger and much more powerful lithotrite, continuing the operation under anæsthesia as long as necessary to complete the crushing, and evacuating the debris through a large straight or curved tube, about ten millimeters in diameter, he has succeeded in removing all stones of ordinary sizes at a single sitting. In one case upwards of eighteen hundred grains were thus removed in three sittings, extending over a period of nine days.

By this method we are led to believe that stones which have heretofore been considered beyond the reach of lithotrity may be readily crushed and removed at a single sitting with no greater risk than has heretofore attended this operation. It must be confessed, however, that this new method is still *sub judice*.

The character of the stone will be determined by the percussion-note elicited while exploring with the sound, the history of the case, the chemical and microscopical examination of the urine, and by the probabilities, judging from the relative proportion of the principal varieties of stone. It may be stated in general terms that about 60 per cent. of all calculi consist of uric acid or urates, about 36 per cent. are phosphatic, and the remaining 4 per cent. are oxalate of lime. It is also well to remember that nearly all phosphatic stones have a nucleus consisting of either uric acid, oxalate of lime, or some foreign body, and in this latter case the nucleus may prove too hard or elastic to admit of being crushed. This can, of course, be seldom determined in advance.

Assuming then that lithotrity has been selected as the treatment to be adopted, the preparation of the patient becomes the next point for consideration. This should consist of a few days

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rest and recumbency, to remove the stone from the neck of the bladder, and of such other measures as may be employed to put the urinary organs and the system in general into the best practicable condition. The urethra is accustomed to the passage of instruments, the patient is gradually divested of his nervous apprehensions by the same means, the surgeon familiarizes himself with the capacity and conformation of the organs and the position of the stone, as well as with his patient's mental and physical tendencies.

The selection of instruments is also a matter of the greatest importance. As to the pattern there is now very little difference of opinion. The shape of the sound for exploring the bladder is too well established to require discussion. The lithotrite known as Thompson's has so entirely superseded all preceding designs as to leave no rival in the field until Bigelow came forward with certain modifications.

All surgeons agree that the fenestrated lithotrite is only to be used, if at all, upon large stones and at first sittings. For all other occasions the flat bladed or scoop lithotrite is to be preferred as being less liable to injure the bladder, and giving much greater facility in seizing small fragments and thoroughly crushing them. Undoubtedly it is desirable to use as large an instrument as can be safely introduced, for the reason that it acts much more rapidly while in action.

The modifications proposed by Bigelow consist in the increased size and strength, the substitution of a ball for the wheel for actuating the screw, an improved lock for throwing the screw into or out of action, and a peculiar serration of the male blade which secures it against clogging with detritus, and thus allows it to be used for any length of time without removal from the bladder for the purpose of cleansing, as is necessary with other instruments not fenestrated.

There seems to be no valid objection to anæsthesia in such cases as seem to require it, *i. e.*, in which the organs are especially sensitive or irritable, the patient excitable, or the sitting at all prolonged.

Should an enlarged prostate or a dilated "*bas fond*" interfere with the ready seizure of the stone this should, if possible, be

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overcome by elevating the patient's hips so as to roll the stone farther upward along the posterior vesical wall.

Operators are not agreed as to the amount of fluid the bladder should contain for safety and ease in operating. Most writers consider three or four ounces indispensable, whereas Thompson is quite content with one ounce or two, as he considers it easier to find the calculus in a small quantity, while, if the lithotrite is properly constructed, it will be almost impossible to grasp the bladder in its jaws. Possibly one as dextrous with this instrument as Thompson might safely operate in a bladder nearly empty; but should its inner surface be irregular or trabeculated, or thrown into folds in consequence of atonicity, it might prove a hazardous experiment for a less skilful operator.

Without dwelling upon the details of the introduction and manipulation of the lithotrite it will not be a amiss to touch upon the cardinal principles governing this operation. Few surgical procedures require such careful attention to details, each of which is essential to success, and the neglect of which will almost surely result disastrously. In the first place the utmost delicacy and gentleness should characterize every manipulation, for upon this will depend the amount of irritation or inflammation produced. The lithotrite should be moved as little and held as steadily as possible, and if the position of the stone is once learned very little motion will be required. The sitting should be as brief as possible. This has been limited to two or three or at the utmost five minutes by most operators, and especially by Thompson.

As opposed to this rule Bigelow has, in some instances, prolonged his sittings to as much as three and three-quarter hours under ether, and generally from one to two hours without producing, so far as his published cases show, any unusual reaction. Still, even the administration of ether for three or four hours cannot be looked upon without serious apprehension.

The subsequent treatment in all cases would consist in strict recumbency and quiet until the reaction produced should have subsided. According to the established method no attempt would be made after the first sitting to get rid of any detritus beyond what might be voided with the urine in the recumbent

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position; the patient being kept as quiet as possible to avoid irritation of the bladder by the motion of the angular fragments, and to escape the risk of impaction of fragments in the urethra. As subsequent sittings more perfectly pulverize these fragments less apprehension may be felt as to these complications.

In some instances the bladder is washed out with Clover's apparatus, while some of the best authorities consider the advantages derived are scarcely sufficient to compensate for the added disturbance from its use.

Bigelow, upon the contrary, believing that less danger is to be apprehended from immediate evacuation than from the retention of and consequent irritation by the angular fragments, as well as the repeated operations and the prolonged treatment, proceeds at once to remove these from the bladder, only seeking to comminute without reducing them to powder. In order to accomplish this he takes advantage of the utmost capacity of the normal urethra, incising the meatus if necessary, or divulsing strictures so as to allow the passage of tubes in sizes varying from 27 to 31 Charrière. These tubes are by preference straight, although they are also made curved and with a single opening upon one side at the extreme end, so shaped as to allow the passage of fragments of the full diameter of the tube.

The tube is attached by means of flexible rubber tubing to a stiff rubber bulb holding about ten ounces, supported upon a stand and having a glass receptacle for detritus at the bottom. By the skilful manipulation of this apparatus he succeeds in rapidly evacuating all small fragments, and by the reintroduction of the lithotrite, if necessary, soon empties the bladder entirely.

It remains to be seen whether a more extended experience will establish the wisdom of these bold measures. Certainly we cannot expect those who have won their laurels by the slower and more cautious process to at once abandon their former methods, but should statistics set their seal of approval upon litholapaxy the profession will not be slow to accept the better way.

In all cases a large proportion of the time is occupied in searching for last fragments or in making sure that all have been

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removed. This search is greatly facilitated by depressing the floor of the bladder with the heel of the lithotrite so as to produce a funnel-shaped cavity, down the sides of which all fragments will gravitate into the jaws of the instrument, especially if the female blade is flat and low at the sides so as not to interfere with their passing over its edge. With proper attention to this very important and indispensable item there should be no greater liability of recurrence after this operation than when the calculus is extracted entire.

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XXXIII.

ORGANIC STRICTURE OF THE URETHRA, AND ITS TREATMENT.

By E. C. Franklin, M.D., Ann Arbor, Mich.

The subject under consideration will not review the various causes, or include the pathological changes inducing stricture, either as the result of specific contagion, or as a consequence of preceding medication. I shall view this affection merely as a *condition* imposed upon the urethra by pre-existing morbific agencies, resulting in a deposit of lymph or plasma into the substance of the tissues, which, escaping the influence of the absorbents, fills up the cells, interstices or molecular spaces, increasing both weight and consistence of the part terminating in a partial closure of the urethra. This condition Sir Charles Bell defines to be a canal that has lost the power of dilatation, in consequence, as we shall see, of the pressure exerted upon the nervous filaments by augmentation of bulk in the part diseased. Mr. Thompson defines stricture to be an obstruction of the urethra, first, by a membranous diaphragm which he denominates *linear;* second, where the contracted part is thicker than the linear, which is termed *annular;* and, third, the *tortuous*, which includes those varieties that cannot be classified under either of the above heads. Dr. Otis, on the contrary, contends that "a true stricture always and of necessity surrounds the urethra," and is located "at those points where gonorrhœal inflammation runs the highest and dwells the longest, viz., the bulbous and navicular parts of the urethra."

The Urethra.—This compound tube extends from the neck of the bladder to the terminal portion of the penis, is generally nine

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inches in length, and is divided into four portions. First, the *prostatica*, which embraces that portion covered by the prostate gland. Second, the *membranosa*, ten or twelve lines in length, extending from the apex of the prostate to the bulb of the corpus spongiosum. Third, the *bulbosa*, which is about one inch in extent, and corresponds with the bulb of the urethra. Fourth, the *spongiosa*, which is about five inches in length and extends from the termination of the bulbous portion to the meatus urinarius. Its configuration is not unlike the italic letter *f* in the dependent state of the penis, but it possesses only a single curve during erection. The correspondence of the urethra with the penis is variously estimated by different authors. Helmuth says: "A man with a small penis may have a large urethra, and the tube may be of small calibre in an organ of good size." On this point Professor Otis remarks: "But when it comes to be recognized, as has been proven beyond the possibility of contradiction, that the capacity of the human male urethra bears always a constant relation to the size of the penis with which it is associated, and that this organ varies greatly in size in different individuals, it will be at once seen that no average standard can be arrived at which will be of practical utility in diagnosis and treatment of stricture, any more than an average standard can be adopted by the shoemaker for the normal human foot." My own experience corroborates the position occupied by Professor Otis, and I can most certainly testify to the fact advocated by him, that there exists an unerring relation between the capacity of the urethral canal and the size of the flaccid penis. In an examination of more than one hundred urethræ, during one year's observation, he demonstrated the following results, "to which there has not been found a single exception:" That when the circumference of the flaccid penis was three inches, the circumference of the urethral canal was found to be at least 30 of the French scale; when it was 3½ inches the capacity would be 34, and when it attained the capacity of 4 inches the urethra occupied 38 in the same scale. In every case examined, he says, "the urethral calibre was over rather than under the figures above given." This accurate measurement was taken very carefully by the aid of the urethra-meter and the metallic bulbous sound, with which,

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says the author, "the thorough examination of any presenting urethra may be made, and the precise locality and value of every deviation from its normal calibre be positively determined."

Locality.—Strictures may occur at any portion of the urethral canal, and may exist either solitary or multiple. Sir Henry Thompson remarks, concerning the number of strictures found in a single urethra, that "several separate strictures may be observed in the same subject." Rokitansky speaks of *four*, "and does not record a higher number as having come under his own personal observation." John Hunter's statement that he had discovered *six* in the same urethra is accepted by the profession. Leroy d'Etiolles claims to have found *eleven*, which he discovered by means of the bulbous sound. Dr. Otis says: "Among the patients which I have operated upon during the past year there were present *six* in two cases, *five* in three, *four* in one, *three* in three, out of twenty-seven cases observed." "The rarity of the occurrence of multiple strictures in the same urethra," says Professor Otis, "is, I am sure, due to an imperfect method of examination. The use of the ordinary sound is quite valueless in the attempt to recognize or define slight contractions of the urethral canal, which often readily dilate to its normal calibre, while they can be perfectly demonstrated by a bulbous sound two or three times smaller." I have frequently met with strictures, which could not be determined by an ordinary symmetrical bougie, which were readily recognized by the bulbous sound. Again, even by the aid of the bulb-sound, strictures may escape observation by passing the instrument *inwards*, which will become distinctly recognized in its *outward* passage, especially if it be permitted to remain within the bladder a few moments before withdrawal. I agree with Professor Otis, that "the bulb-sound is the only instrument which can be relied upon for certain diagnosis of strictures of large calibre." For explorations of the straight portions of the tube, "I prefer," says Otis, "the metallic olive-shaped sound; for the curved portion, the olive-shaped gum bougies." The portion of the urethral canal most liable to strictures is differently estimated by different authors. John Hunter observes that the bulbous portion is most liable; Sir E. Home writes, "Next to the bulbous portion, the most frequent

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place is four and one-half inches from the meatus;" and Mr. Liston coincides generally in these views. Mr. Shaw, in more than one hundred dissections, has never found a stricture posterior to the ligament of the bulb. Vidal's observations lead him to the conclusion that they are most frequent at the junction of the membranous and bulbous portions. Dr. Otis draws the deduction from all these statements that "they occur, as would naturally be expected, in greatest frequency where the inflammation begins the earliest and rages the hottest, and gradually diminish in frequency in the deeper portions of the canal. In 258 strictures examined by him, 52 were in the first quarter inch of the urethra, 63 in the following inch, 48 were found from 1¼ to 2¼, 19 from 3¼ to 4¼, 14 from 4¼ to 5¼, 8 from 5¼ to 6¼, and 6 from 6¼ to 7¼. Thus observation proves that the most frequent locality for stricture exists in the subpubic curvature.

Symptoms.—Among the earliest symptoms which attract the patient's attention, is some disturbance respecting micturition, such as a slight irregularity in the stream, a desire to pass water more frequently than usual, with the retention of a few drops of urine, which, after evacuating the bladder, dribble away and soil his linen. At the same time there will be observed a slight muco-purulent discharge from the urethra, with a feeling of weakness about the genital organs. As the affection progresses the symptoms become aggravated and increased in number. His sleep becomes disturbed by repeated calls to urinate, the stream now becomes spiral, forked, or fine as a thin wire; or it may, from distension of the bladder, pass involuntarily. In this condition of the disease it has been mistaken for incontinence of urine. Blood may also be passed, coming from the bladder or from the diseased portion of the urethra. If it proceeds from the bladder it may be differentiated from that of the urethra by its being uniformly diffused through the urine, the latter part of the stream being darker than the first. If it proceeds from the urethra it escapes in clots, or may be discharged independently of the flow of urine. Complete retention may also occur at any stage of the disease, in consequence of spasm and congestion, and which may occasion so great a distension of the bladder as to result in rupture; more commonly, however, the rupture occurs

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in the urethra immediately behind the seat of the stricture. With the discharge of urine, which diminishes as the stricture increases, it will be found to contain mucous shreds, and coexistent therewith there will be a sense of heat and soreness about the bladder, pains during coitus, and finally the urine dribbles away incessantly drop by drop.

The changes effected by the steady progress of the disease will be apparent in the whole genito-urinary apparatus. Sacculi of the bladder are frequent, and some of them have been found capable of holding from two to three ounces, and cases are on record where the disease has extended beyond the bladder, through the ureter to the pelvis and calices of the kidneys. Especially are these sacculi found in the urethra immediately behind the stricture, which often attain sufficient size to admit the passage of a man's finger. Constant contact of the walls of the urethra with urine often results in ulceration of that membrane. Owing to extreme dilatation other serious consequences may arise, such as abscess of the prostate, or epididymitis from irritation conducted along the *vas deferens*. Ulcerated openings behind the scrotum or near the anus, and abscesses in the perinæum will occur from rupture of the urethra, the urine infiltrating through the tissue and giving rise to fistulas, which demand the most careful and considerate attention of the surgeon.

Diagnosis.—Other affections of the urinary organs may be mistaken for strictures such as subacute inflammation of the prostate, neuralgia of the urethra, stone in the bladder, or hyperæsthesia of the viscus. Nearly every symptom mentioned as belonging to stricture may be present in subacute inflammation of the prostate; stone in the bladder produces the usual frequent micturition, pain, and dribbling of urine, the peculiar corkscrew stream. Hyperæsthesia, depending upon the irritation of stone, or other affections of the rectum, may give rise to a similar train of symptoms, which demand of the surgeon the greatest caution in arriving at a diagnosis. The only sure method of determining the existence of a stricture is the introduction of a sound or probe.

Pathology.—The pathological sequences of organic stricture are often serious, and call for the most considerate treatment on the

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part of the surgeon. In mild cases, the canal in front of the contraction preserves its normal dimensions and character, but in severe and chronic cases, when the flow of urine has been much obstructed, and the anterior portion of the urethra, either through sympathy or continuity of tissue, has participated in the inflammation which chiefly affects the parts behind the stricture, it is contracted. Posterior to the stricture the urethra is enlarged as a natural consequence to the impediment to the free evacuation of the bladder. The *prostatic* portion of the urethra is more susceptible of dilatation than the membranous, owing to the nature of the tissues surrounding it.

Stricture tissue, says Otis, is simply cicatricial material, deposited in accordance with the accepted pathological law, that persistent irritation of living tissue results in the aggregation of cells and the development of connective tissue corpuscles at the point of irritation, which becoming organized in the submucous cellular tissue and the adjacent muscular structure of all the corpus spongiosum, results in a more or less resilient band or bands always completely surrounding the urethra. As soon as the calibre of the urethra is lessened at any point, the resistance to the flow of urine which it necessarily occasions, and the resulting interference with the harmonious muscular action produces an irritation *in its whole circumference* at the point of contraction, resulting sooner or later in an aggregation of fibro-plastic material, not confined to a single point in its circumference, but around the entire canal, and this fact renders it necessary for us in all cases of strictured urethra to accept the difficulty as one of stricture in its true sense, and not of obstruction at a single point. According to this theory, which seems to have been arrived at after much examination and study of this affection, there is presented in every case of stricture, a resilient band or circle of fibrous tissue, surrounding and contracting the urethral canal at one or more points, which possesses the characteristics of greater or less density according to the duration of the disease and the innervation of nerve tissue involved in the morbid process. The relief and consequent disposal of this resilient band is the important factor of treatment in such cases, and the best way to effect this is the subject-matter of the present treatise. I am not a believer in the true curability of

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stricture according to the principles at present taught by our surgical authorities, who depend upon its removal either by *gradual* or *rapid* dilatation, *divulsion* or *complete division*, to regain the normal calibre of the urethral canal. Strictures have been *dilated*, *rapidly distended*, *divulsed*, and *divided*, and the patient pronounced cured, yet the pathological condition has attained the same status as before the operation, and in quite a number of cases it has assumed an even more intractable form. On the other side, many cases have been so far benefited by the one or the other of these procedures, that the patients have passed many years of comparative comfort and exemption from the evils to which they had been previously subjected, not by the disappearance of the pathological process, but by an actual increase or distension of the urethral walls, the separated surfaces being filled up with plastic lymph, which becoming organized adds so much to the actual dimensions of the canal, upon the same principle that a divided tendon may be lengthened by the neoplasm that fills up the chasm between the cut extremities. This process of relief is a bungling method, unscientific, and uncertain in its final issue, but undoubtedly it has been made in many cases to respond to all the conditions of a cure without the actual curative process being established.

I shall endeavor to establish the fact that non-cartilaginous strictures may be cured by other processes than those detailed above; but cartilaginous strictures, where the diseased organism has been almost entirely deprived of its nerve-sustaining power, and where the tissues have become hard and consolidated by the gradual accumulation of plastic matter, till all the molecular spaces have become completely and entirely filled up with the neoplasm, and the vitality of the mass is hardly definable, then surgical methods are indispensable.

Treatment.—In the treatment of organic strictures the chief consideration is, says Helmuth, "the restoration of the canal to its normal calibre and its maintenance in that condition." How may we do this? says the same author. His answer is, "We may introduce, from day to day, bougies of increasing diameter, until the contraction is overcome, or we may forcibly separate the adhesions at once."

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I admit that this is *one* way of restoring the canal to its normal calibre; but is it the *true* way of curing these affections? By the same kind of reasoning the allopathist doses his patient suffering from gonorrhœa with a sort of *post hoc propter hoc* medication, and if, says Yeldham, a patient can make up his mind to swallow the enormous doses of Copaiba, etc., ordinarily prescribed, and his stomach will retain them, then he stands a chance of getting rid of an attack of gonorrhœa as speedily as any other system can rid him of it; but if he prefer the small doses of the homœopathist, then I boldly assert that he can get rid of his complaint as quickly and effectually as by any other means. In the earlier stages of organic stricture, where all the evidence pointed to the existence and increasing development of this affection, I have cured scores of cases by medication and other therapeutical measures, without the vaunted necessity of instrumental means. If we are not blinded by the fallacious and *ad captandum* aphorism, that *all* strictures of the urethra require dilatation or division, we can find some solid comfort for our patients in the use of homœopathic means properly employed. I do not intend to reflect discredit upon the well-won reputations of our surgeons who have used mechanical measures in overcoming these troubles, or to underrate the issues of those cases that have been relieved of their various pains and apprehensions by such procedures; but I wish to impress upon the minds of our younger brethren in the field of operative surgery, that a large portion of these strictured urethras can be cured by therapeutic remedies *alone*. That there are organic strictures that will not yield to medicinal treatment I am well aware, but I believe the individualization of these cases is not properly made, and many patients that have yielded to the grosser mechanical means could have been permanently and pleasantly cured by our unaided therapeutical measures. I believe that my experience in the treatment of such affections is second to no homœopathic or allopathic practitioner in this country (who has not made a specialty of these important diseases). It is in view of this proposition that I make the issue, that all non-cartilaginous cases of stricture, those which possess sufficient resistancy to respond to medicinal impressions, can be cured by therapeutic agencies alone, if the remedies are carefully

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and properly administered. In the cartilaginous varieties, where from the total inundation of plastic matter into the tissues enervation is produced, and vegetative existence is all that yet remains in the once vitalized part, with no reactive power left to respond to the life-giving force of the drug employed, then mechanical means are the proper expedients to be employed. I shall only briefly refer to those medicinal agents which in my hands have accomplished the most good, and shall give them in the order in which they have proved the most efficacious: *Santalum citrinum, Cubeba, Clematis erecta, Petroleum, Equisetum hym., Mercurius corros., Æsculus hip., Cantharis, Digitalis, Thuja occid., Cicuta virosa, Belladonna, Dulcamara, Pulsatilla, Agaricus, Lycopodium, Eupatorium purpureum, Silicea, Phosphorus, Sulphur.*

Electrolysis.—Before the publication of Dr. John Butler's *Textbook of Electro-Therapeutics and Electro-Surgery*, I had received many valuable hints on the use of this important agent in the treatment of urethral strictures from my friend, Dr. E. A. Murphy, of New Orleans, whose rich experience and practical observations have shed a light over our hitherto darkened knowledge concerning the curative power of this important medical agent. Since reading Dr. Butler's work, the isolated facts and clinical investigations I had previously acquired from various sources, I find have been grouped by him into a scientific method of the application and use of this much-valued agent. I believe the time is not far distant when not only strictures of the urethra, but *all* tumors, the result of organized plastic lymph, thrown out into the intravascular spaces, will be as readily cured by this process as is fever controlled by its similimum Aconite. It is true the profession has done much good work by the various surgical methods of *dilatation*, *divulsion*, and *division;* but these heroic processes have not accomplished there aims without considerable personal suffering and some degree of risk to those upon whom they have been employed. I have witnessed the divulsion of five cases of urethral stricture in one hospital, and in every case after the operation a bougie could be passed into the bladder of a corresponding size with the meatus, and yet in spite of the succeeding treatment of continued dilatation, which was kept up for days after "the bursting," three of these cases pre-

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sented themselves for further treatment in less than twelve months from the time of rupture. I have treated scores of cases where dilatation had been effected both by the rapid and gradual method of performing this operation, until complete restoration of the calibre of the canal had been brought about, and in a period of time, ranging between ten and twenty-four months, these patients were again forced to consult the aid of the surgeon for relief. I could multiply these cases *ad nauseam*, where the processes employed for the cure of those affections failed altogether in their object, and other and more rational means were employed to effect "the restoration of the canal to its normal calibre."

My object, however, is not to recount the ill successes that have followed the use of the means ordinarily employed by surgeons in the treatment of stricture, but to indorse before the profession other, and, I believe, more satisfactory means for its cure by the method of electrolysis, by which I have witnessed the most gratifying and successful results. I shall quote from Dr. Butler's work the manner of application of this valuable curative agent, and present a synopsis of cases cured by the process:

"In stricture of the urethra, as before remarked, the result desired is the *absorption* of the stricture, and except in old, hard, cartilaginous strictures, all cauterizing effects must be sedulously avoided. The method of operating electrically, with a view to causing this absorption, is to introduce into the canal an electrode about a size larger than the stricture will admit (insulated to the tip) down to the stricture. The electrode in this case must be soaped, not oiled (oil being a non-conductor), for the purpose of lubrication and to facilitate its introduction. This electrode is then to be attached to the *negative* pole of the battery. The circuit is completed by the broad sponge theophore, moistened with salt and water, and either held in the hand of the patient or placed upon some convenient part. The patient may be operated upon either standing or lying, as is most convenient. As regards the amount of current to be used, the first point is here, as elsewhere, to use as little as will produce the desired effect, and that is best judged by consulting the sensation of the patient.

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We must avoid all production of pain. As soon as the patient feels the current the intensity is sufficient, and should not be increased beyond this point. I prefer the use of some modification of Daniell's elements; and perhaps I may state, as an average, that a current from six to twenty of these cells is all that is ever needed. Keeping the electrode pressed in contact with the stricture, but not forced, we generally have the satisfaction, in a few minutes, to find that it slips with facility through. If a second stricture is present it may be treated in the same way. This completes the first operation, which may be repeated as many times as necessary, at intervals of a few days."

It will be observed that Dr. Butler places great stress upon the application of the *negative* pole to the stricture. The positive pole produces an eschar, which, healing by contraction, will cause a stricture, rather than cure it.

The following cases from Dr. Butler's treatise and my own practice will show the curative value of electrolysis in these affections:

CASE XLVIII.—M. J., æt. 40, a strong, robust man, consulted me relative to a stricture of the membranous portion of the urethra, barely capable of admitting a No. 5 bougie. The stricture had been in existence twelve years; it was very irritable, and bled freely on being touched. A No. 5 sound (insulated to less than half an inch of the tip) was passed to the stricture. The circuit was completed by connecting it with the negative pole of a small battery and a moistened sponge placed in the groin, and a current of twelve elements was permitted to flow uninterruptedly for five minutes; then reducing it to eight elements it was continued for five minutes longer. After the operation a No. 7 sound was introduced easily; the size of the stream of urine increased; the patient experiencing some slight pain on urinating for a day or two afterwards.

Ten days after the operation an insulated No. 9 bougie was passed into the stricture, and a current of twelve elements for five used, when the instrument readily passed the stricture. This instrument was withdrawn and a No. 11 electrode passed, using eight elements for five minutes. One week afterward a full-sized

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bougie was passed into the urethra and continued for five weeks, when he was dismissed *cured.*

CASE XLIX.—M. B., a sailor, æt. 35, had a stricture in the spongy portion of the urethra, and another in the membranous. The first scarcely admitted a No. 6 sound; the latter would give passage to a No. 2 sound. The same operation was performed as in Case XLVIII, except the instruments were much smaller. The stricture in the spongy portion required two operations, and the one in the membranous three; cured.

The following case occurred in the practice of Dr. E. A. Murphy, of New Orleans:

CASE L.—S. M. G., æt. 33, was treated for seminal weakness. The urethra was perfectly healthy, with no evidence whatever of stricture. An electrode was inserted into the urethra to the orifice of the common ejaculatory duct, and attached to the *positive* pole of the galvanic battery. The current being unnecessarily strong, produced a slough, which healed by contraction, which resulted in a stricture that almost closed the canal. A few applications from the *negative* pole of the battery cured him in a short time.

CASE LI.—H. T., a clerk, æt. 34, had gonorrhœa seven years ago, which resulted in stricture in the spongy portion of the urethra. Great difficulty was experienced in passing a No. 2 bougie. Four applications of the electrode, at a week's interval, from the negative pole of the battery, completely cured him, so that a bougie could be passed through the entire urethra of a size corresponding with the meatus, without the slightest impediment.

CASE LII.—W. L., a merchant, æt. 57, has had a stricture for seventeen years, for which gradual dilatation has been employed, and a bougie passed every week, for the last eight years. Disgusted with this method, he resolved to abandon all treatment, and in fifteen months it was very difficult to pass a No. 2 sound into the bladder. The stricture was in the membranous portion. A No. 2 electrode was passed down to the stricture and attached to the negative pole of the battery. Five applications relieved him, and an occasional introduction of a No. 10 bougie for five weeks was kept up, for the purpose of completing

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the cure. It is two years since the treatment, and there is no evidence of a return of the stricture.

Thus I might enumerate case after case where electrolysis has been employed in the cure of this affection with the most satisfactory results, and I have yet to see the first case of a return of the stricture when treated by the method detailed above. The advantages, says Butler, of treating strictures by this method are: "1st. There is no tendency to reformation, even when the current is used so strong as to destroy the mucous membrane, *as the eschar produced by the negative pole never heals by contraction, but is soft and dilatable*, as may be readily seen when occurring on the skin, or mucous membrane externally. 2d. There is no hæmorrhage, or very little. 3d. The pain produced is trifling. 4th. There is no surgical shock. 5th. There is no after-inconvenience to the patient. 6th. There is only a short after-treatment required;" and lastly, I may add, *there is no danger to life.* I believe that the above treatment, when generally understood and properly applied, will supersede all other methods of cure now practiced by surgeons. It obviates the necessity of the severe measures heretofore employed, reduces the cure to the minimum of pain and inconvenience, and greatly simplifies what has always been considered a serious and painful operation. Since this method has been made known to me, and proved by many trials, I have thrown aside the whole armamentaria of instruments previously employed in the treatment of these cases, and I can say, with candor and confidence in its curative power, that I have succeeded in bringing to a successful termination every case presented to me for treatment, and I heartily commend it to our profession as an advance in a direction most worthy of its patronage and support. In those severe cases terminating in rupture of the urethra, extravasation of urine, abscesses and sinuses, impassable and traumatic stricture, that involve the operation of opening the urethra by either external or internal urethrotomy, quite a different procedure is required.

External Urethrotomy.—In such instances various surgical expedients have been devised. Professor Syme recommends* "per-

* Vide System of Surgery, by Professor W. Tod Helmuth, M.D.

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ineal section" or "external urethrotomy" as the only safe and sure means for the radical cure of traumatic or impervious stricture. Professor Gross, in a recent lecture, "Then and Now," in speaking of the rapid strides in surgery and the great improvements in medicine, indorses the views expressed by Syme. This operation has received the sanction of many eminent surgeons, and is "growing daily in repute."

Internal Urethrotomy.—Two leading principles of treatment govern this operation; first, the division of the stricture from *within* outwards or from *without* inwards, the first of which is considered by modern surgeons the more preferable. The operations responsive to the various conditions growing out of ill-treated or neglected strictures do not belong to the proper scope of this paper, and I take pleasure in referring the reader to the many treatises on surgery, none of which occupy a more exalted and comprehensive position than the recent *System of Surgery* by our distinguished friend the Professor of Surgery in the Homœopathic College of the city of New York.

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XXXIV.

*ON RETENTION OF URINE AND CATHETERISM.**

By Marshall O. Terry, M.D., Ithaca, N. Y.

Retention of urine may exist in the young, middle-aged, or in the old. It usually results from prostatic congestion or inflammation, urethral stricture, stone in the bladder, prostatic enlargement, foreign bodies in the urethra, urethral spasm, and urethral rupture. Voluntary retention, often repeated and long kept up, may result in an inability to pass water; so also vesical paralysis will give rise to it. Again, gout and rheumatism, pelvic tumors, hysteria, inspissated mucus, plastic matter, worms, calculous concretions, pressure of the gravid uterus, pressure of the rectum on the neck of the bladder, and imperforate prepuce.

In the female the causes leading to retention are grouped by Dr. J. W. Croom in the *Medical Journal* as follows:

1. Injuries or contusions during labor, acting directly or by subsequent inflammations.
2. Pressure of displacements or tumors acting mechanically on the urethra or neck of the bladder.
3. Injuries or growths acting reflexly.
4. Diseases of the nervous system.
5. Direct obstruction within the urethra, as from stricture or foreign bodies, such as calculus.

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* The substance of this paper has been taken from the Medical and Surgical Reporter, Medical Record, Ranney on Surgical Diagnosis, Gross, Van Buren, Thompson, etc. Have only changed the wording when absolutely necessary.

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He further says:

1. In all cases of retention of urine a vaginal examination is necessary.

2. A gum-elastic male catheter of medium size, without stilette, is the best form of instrument to employ.

3. In retention from displacement it is important to remember the altered position of the urethra. In retroversion of the gravid uterus the vagina is drawn upward and forward.

4. When any difficulties exist in accounting for the retention, a visual examination should be insisted on.

5. It is a safe rule, before giving a definite verdict on any pelvic-abdominal tumor, to empty the bladder.

Diagnosis of Retention.—Corresponding with the middle line there will be a hard, pyriform, circumscribed tumor above the pubes, more or less tender on pressure, fluctuating, not affected by change of posture, and gradually increasing in volume; a frequent desire to void urine, which if passed at all is discharged in drops or small jets, never in a full stream or any considerable quantity; uneasiness and sense of weight in the pelvic region, soon followed by pain and spasm; straining, forcing, or tenesmus on every attempt at micturition; at first absence of fever and then rigors, alternating with flashes of heat, and, in the latter stages of the complaint, excessive restlessness, hot skin, small and frequent pulse, distressing headache, and indescribable sense of oppression, urinous breath and perspiration, tymphomania and a hippocratic condition of the countenance. The bladder will not burst unless there exists ulceration or is subjected to mechanical violence; after it has been distended for a time dribbling will take place through almost any obstruction.

Treatment.—Owing to the various causes of retention many expedients are necessary to relieve, and prominently among the methods will be considered catheterism.

In case of retention from prostatic congestion, inflammation, or enlargement, the shoulders should be placed low. The patient having been laid crossways in bed, the legs are flexed, and the surgeon standing between them with a syringe injects two or three drachms of warm olive or cosmoline oil, and by gently rubbing on the urethra assists its passage downwards. Elevate the

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penis so as to straighten the urethra; introduce a probe-pointed catheter of from number six to nine, English scale, and carry it downwards; you will feel its point enter the tortuous channel of the prostatic urethra, and you will be sensible of the grasping resistance; keep up a gentle, continuous pressure, and in a large majority of cases the point of the instrument will glide into the bladder. Should there be no flow of urine after the instrument has passed into the bladder, or has reached its urethral orifice, the catheter is probably clogged with ropy mucus, the viscid character of the contents of the bladder. Employ suction by the aid of a syringe connected by a rubber tube fitted into the end of the catheter, and it may be necessary to throw down some warm water to dislodge the mucus before the urine will pass through the catheter.

In Retention from Stricture.—A man, the subject of stricture, to a greater or less degree indulges too freely in drinking, eating, or venereal excess; his irritable urethra responds, and these muscles are thrown into a state of spasmodic contraction, induced also by congestion of the vessels of the part; he attempts to pass water, and being unable to do so is alarmed, and his retention for the time becomes complete. Under such a condition it is seldom necessary to use a catheter; a hot hip-bath, rest, an enema of forty or fifty drops of Laudanum, and ten drops of the Tincture of belladonna by the mouth, being usually sufficient to relieve in a few hours.

The catheters to be used are of various forms and sizes. The silver are preferred by some on account of their rigidity, but generally the flexible without the stilettes are used, they being easier of passing than the silver ones, and gliding when well warmed and oiled with greater comfort to the patient. The vertebrated catheter may be of service in special cases, where the middle lobe of the prostate is enlarged or the canal is tortuous. It is well to have an instrument of extraordinary length, as in exceptional cases the catheter fails to reach the bladder on account of the distension carrying the bladder high up into the pelvis.

Before using the catheter, where difficulty is apprehended in introducing it, a good plan is to inject two or three drachms of

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sweet oil or cosmoline oil; then, after warming and oiling the instrument to be used, grasp the penis with the left hand in such a manner as to open the meatus; enter the beak, holding the handle over the median line of the patient's abdomen. With a proper anatomical knowledge, together with patience, most impermeable strictures may be made permeable.

Dr. Brinton has given the following directions:

"The point of the instrument should follow the lower wall of the urethra until the glans is passed, in order to avoid the lacuna, which there exists in the roof; but from this point until the bladder is reached the upper wall should be followed closely, since pockets and depressions are found much more frequently on the floor. Permit the instrument to glide down the canal almost by its own weight, keeping the handle directly over the median line of the abdomen until the membranous portion is reached. The membranous portion having been reached, the most common seat of stricture, the point of the instrument is to pass upward and backward, and will require that the handle of the instrument be brought downward midway between the thighs. Manipulate gently, slowly and steadily, carefully keeping the instrument along its upper wall; when arrested, withdraw and advance again; employ no force, have patience, place the finger in the rectum if uncertain whether a false passage has been entered and guide the point. The tightness or laxity with which the instrument is held will often be of assistance, since a false passage usually holds it loosely, and also imparts a sensation of roughness. Being satisfied that the stricture has been entered, keep a careful unremittent pressure upon it for at least five minutes, at the end of which time the muscles may be felt becoming tired in their resistance; and now engaging the patient in a moment's irrelevant conversation, throwing him off his guard, the instrument is in the bladder. Failing to pass the instrument, after a trial of twenty or twenty-five minutes, the patient should be given a warm hip-bath, an anodyne injection, and fomentations over the pubis. If, after waiting a few hours, urine does not commence to trickle, etherization may be tried, and another attempt made; should this fail, or if thought unadvisable to make a second trial, aspiration may be performed."

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Dr. Fessenden N. Otis says that retention of urine not infrequently occurs as the result of a reflex irritation, caused by contraction at the meatus, when there are no strictures whatever. In these cases a free incision, followed by the sound, will protect the patient against retention of urine in the future. By free incision is meant that it is to be divided to such an extent as will correspond with the canal behind it.

Retention from Overdistension.—When retention of urine follows in consequence of overdistension and atony of the walls of the bladder, Mr. N. C. Wilson, of Dorcaster, recommends Strychnia. He claims very gratifying results.

I have recently succeeded in a case of this kind. I began by giving the $\frac{1}{80}$th of a grain three times a day, and in forty-eight hours $\frac{1}{25}$th of a grain, which speedily relieved.

A man having been on a debauch, and drank a great deal of beer, had not passed water for twenty-four hours. The bladder was greatly distended and reached to the umbilicus. After making several attempts to introduce the catheter and failing, on account of spasmodic strictures, he was relieved by aspiration above the pubis, the man being relieved of sixty-eight ounces of urine.

In some cases one may succeed by attaching a rubber tube to one end of a catheter and pour water into the other, thus distending the urethra. In a few moments the catheter can be introduced without difficulty.

We may occasionally be called to attend a man of dissipated habits, who, while lying intoxicated, is seized with retention of urine. He has rigors, with great suffering, and the vesical cavity is full of water, but he cannot pass a drop. He may have an inflammatory or organic contraction, to which a spasmodic stricture is superadded, caused by the irritation of the bladder by strong drink. A catheter goes a certain distance into the urethra but no further; the man is in distress; what can be done to relieve him? It often happens that if you will give the patient a quarter to one-third of a grain of Morphia, preferably hypodermically, order him a hot hip-bath, put him warmly wrapped up in bed, and give him a hot whiskey toddy, it will so warm and relax the system in a short time that the urine will flow

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without the aid of a catheter; whereas, if its use had been persisted in at first great mischief might have been done to the parts by the formation of false passages.

Dr. Alexander Hadden recommends water pressure in cases where it is impossible or very difficult to enter a catheter into the urethra. This method succeeds in relieving retention when failing with catheter, bougies, sounds, and hip-baths.

In a case of retention of urine for twenty-four hours in a pregnant woman, wherein catheterism had failed, Tidd gave two 10-grain doses of Chloral, at a half hour's interval, with the effect of producing profound sleep and the spontaneous passage of an enormous quantity of urine.

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XXXV.

BENIGN AND MALIGNANT TUMORS OF THE URINARY BLADDER.

By L. H. Willard, M.D., Allegheny, Pa.

A treatise on affections of the urinary bladder, and especially tumors of the same, is, by the situation of this important organ, very unsatisfactory. In the male is this most especially the case, and in these tumors, perhaps, the diagnosis is chiefly post-mortem. In the female the opposite condition prevails.

By the use of the endoscope and by dilating the urethra we are able to form a tolerably accurate idea of these affections and by means of suitable instruments they can be successfully removed.

We have adhered to the classification of tumors adopted at the last meeting of the Institute, and propose to consider them in a manner similar to Dr. Skene, with this exception, that the sarcoma and villous growths are classified as non-malignant. In accordance with this classification we have, first, mucous polypi, polypoid hypertrophies of mucous membrane, papilloma or villous growths, sarcomas, fibromas, myofibromas, cysts, tubercle, and scirrhus or true cancer.

The mucous polypi, in contradistinction to polypoid hypertrophies of mucous membrane, are, as their name implies, simple polypi, situated in any portion of the bladder, and give trouble according to their size and position. They may be developed at any period of life, and are generally found at the posterior part of the bladder. They vary in size from a millet-seed to a goose-egg. When situated near the neck of the bladder, by obstructing

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the urethra, they cause retention and decomposition of the urine; finally, cystitis and muscular as well as mucous hypertrophy.

Polypoid hypertrophy, as the name implies, consists of a general or irregular thickening of the mucous membrane of the bladder. The same irritation or disease may also produce, as it generally does, hypertrophy of the muscular and serous coats. Accompanying them is an increased blood supply, which makes the membrane red; the capillaries are enlarged, and the whole bleeds easily when touched. Dr. Skene says: "On the surface of the mucous membrane there is an excessive cell proliferation; these cells being in a transitional condition, *i. e.*, occupy the niche between perfect and imperfect cells, and are not all of the same degree of perfection or imperfection of development." Upon the surface are often found incrustations of the urinary salts. The villous growths are true papillary formations, possessing a high degree of vascularity, forming generally on the trigone part of the bladder, bleeding easily and profusely, and owing to their high degree of vascularity are very dangerous. They are in many respects identical, except microscopically, and are, for all practical purposes, the same as general polypoid hypertrophies. In some cases these growths are slightly pedunculated, sometimes look like large granulations; also, like a raspberry or mulberry. Dr. Skene says, in consequence of cell proliferation being very rapid, they sometimes lose their identity and take a multiplicity of forms, which explains the reason of their having been mistaken for cancer-cells. As the villi increase in size and number, the connective tissue, whilst increasing around the base, diminishes in the prolongations, leaving little besides a mass of thin-walled vessels, hanging free in the bladder. If, by their position, these growths should stop the flow of urine, inflammation may take place and the other evils incident to that trouble.

The sarcoma, fibroma, and myofibroma, are very rarely found in the bladder, but, when found, possess the same characteristics as in other parts of the body, producing the same changes in the vesical walls and ureters, as other tumors, causing by obstruction retention, followed by hypertrophy or dilatation, cystitis, and urethritis.

Etiology.—To give a cause for the production of these neo-

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plasms is only conjecture. Some think they are owing to blood transudation into the bladder walls. We may presume they are produced by causes not identical, but in a manner similar to those in any other portion of the body.

Symptoms.—The patient may be in good health and only complain of pain in the hypogastrium, with aching pain down on the inside of the thighs; a general uneasiness and heaviness in the region of the bladder. During urination the flow suddenly stops, owing to the passage being blocked by these foreign growths. Before this, however, there may be a hæmorrhage of bright blood, which, if large in quantity, may come away in small coagula. This is more commonly the case in females. The pain is generally felt, if in the male, at the end of the penis, resembling in this respect the symptoms of stone. During the menstrual flow all the pains are aggravated. Frequent urination and vesical tenesmus are, as a rule, present. Hæmorrhage may be so small as only to tinge the urine; at other times excessive, and is liable to occur with all varieties of neoplasm.

As a consequence of these bodies in the bladder the urine is loaded with mucus, muco-purulent matter, and other material, which is the result of evils growing out of the bladder being dammed up by these foreign growths; and following, if these diseases are not cured, comes pyonephrosis, renal abscess, uræmia, and death.

Diagnosis.—In regard to the diagnosis in the male it is largely conjecture; the sound should explain if there is stone, and the urine should be examined by the microscope to detect growths, which may escape in shreds.

In the female, by the aid of the endoscope, the speculum, the finger in the bladder, we can form a good diagnosis.

However favorable the prognosis may be in the female, in regard to the benign growths, in the male the prognosis is quite the contrary. The means of operating, and the difficulty of discerning the trouble, all contribute to the unfavorable result.

Treatment.—Our literature, both surgical and medical, show a wonderful paucity on this subject, and very little can be gleaned from it concerning treatment; but acting on our present knowledge we must consider the various symptoms, and, with the

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microscope to aid us, we may form some definite mode of treatment, giving remedies which not only correspond to the symptoms, but those known to exert an influence on the morbid growths described, and hence we refer you to the various remedies mentioned in our last *Transactions*. One reason of the difficulty in prescribing the true smilimum for these affections is in consequence of the painful symptoms being the result of those growths which perhaps have been formed long before any pain or symptoms are noticed, and only known when, by their presence, there follows the usual train of symptoms peculiar to cystitis, etc. Hence the difficulty of relieving a pathological abnormity by prescribing for the secondary symptoms which are the result of the tumors, or irritation produced by them. We do not propose to argue that it is impossible. On the contrary, if we can relieve all the painful sensations caused by these growths in the bladder with remedies it is useless to operate; for if the painful sensations are removed, then, even though there be growths in the bladder, the patient has a chance for recovery. We must not however take it for granted that, because the patient is better, the remedies have done the service, for it often happens that a period of immunity from suffering occurs in those not under treatment. The microscope and different chemical tests go hand in haud to aid our efforts, and when remedies fail to relieve the pain and distress, the hæmorrhage and exhaustion will suggest for humanity's sake a resort to surgical measures.

The remedies most useful and likely to give relief are as follows:

Arsenicum.—Villous growths of the bladder, very painful micturition, scanty secretion, burning pain in the urinary organs, paralytic symptoms of the bladder, great anguish and restlessness.

Calc. carbonica.—Chronic cases, polypi.

Conium.—Cutting drawing through the urethra while urinating; during micturition the flow suddenly ceases, and after a short time returns.

Hamamelis.—Hæmorrhage from passive congestion of the kidneys and of the bladder; urine scanty, high-colored.

Lycopodium.—Chronic cases, urine dark, flocculent, milky;

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thick, purulent sediment; frequent urging to urinate with heaviness, forcing one to support the abdomen.

Mercurius.—Fever, with chilliness; urine flows scantily, drop by drop, containing pus, blood, or mucus; during micturition great sweat breaks forth.

Sulphur.—Constant desire to urinate; feverish and sleepless during the night.

Other remedies which may often prove useful in these affections are Sang., Staph., Phos., Caust., Sepia, Sarsap., etc.

The surgical treatment for the male will be (and I think it good surgical practice) to perform lithotomy, being satisfied, in the first place, that the tumor is benign, otherwise the operation is to be considered unserviceable. In the female the most essential part of the operation is the dilatation of the urethra. Bryant says, if dilated suddenly there is less danger of incontinence, and, from cases cited, when stones have been removed which were more than one inch in diameter, we may have sufficient room to make thorough exploration and remove these growths by twisting with the forceps, ligating the pedicle, passing the wire of the galvano-cautery, remove it by pieces with the finger, the curette, or forceps. Should they be too large to be removed *per urethram*, Simon's operation may be performed, which consists of a T-shaped incision made into the anterior wall of the vagina, the bladder opened and inverted through the opening, and the tumor thus brought into view in an easy position for operation. When removed the base may be cauterized and the bladder replaced. The wound thus made is closed after the surface of the bladder is healed, and although seeming a formidable operation it is much to be preferred to overdistension of the urethra, which in some cases may produce incontinence, a thing greatly to be deplored.

CYSTS.—This affection is very rare. Their existence is doubted by some and denied by others. Dr. Skene thinks there can be no doubt that some cysts exist in the bladder as mucous follicles exist, and are liable to have their orifices blocked, and by secretion behind the point of obstruction gradually form a cyst. Paget, Liston, and Campa, he says, support the same theory. Hydatid cysts have been found less frequently in this country.

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About one-sixth of the population of Iceland is said to suffer from them in some part of the body. They make their appearance in the urine, and are of a white, pearly appearance, or of a dirty-yellowish color.

The treatment of these cysts is the same as the other neoplasms, if they give trouble. A deranged condition of the system conduces much to their formation, and hence the treatment should be first medicinal. I can give no specific remedies. Like all other affections of the bladder, we must mainly rely on the symptoms, hoping at no distant day to have some data whereby we can intelligently prescribe.

TUBERCLE. — Tubercle of the bladder, as it coexists with tubercle in other parts of the system, has an unfavorable prognosis. The favorite seat of this affection is at the vesical neck, where there are numerous glands and follicles. The deposits appear as minute white or yellowish-white points, on a red indurated base. These, after a time, coalesce and break down into ulceration. They can be seen in the female with the aid of the endoscope.

The symptoms are, first, irritation, then cystitis, ulceration and hypertrophy. Take also into consideration the tubercular diathesis of the patient.

Treatment.—The treatment will be soothing applications to the ulcerated surface, by means of the syringe, of Glycerin, one part to ten (1–10), or Carbolic acid, one part to forty (1–40), which are only used, for the time, as palliatives. We must rely on constitutional remedies useful for tubercle to make or give a better tone to the system.

CARCINOMA of the bladder is not a common affection. The symptoms are similar to other growths, with more pain of a severe character. The hæmorrhage is generally less.

The diagnosis in the male can only be made by the microscope, which reveals the imperfect formation of real cancer-cells. It may be that cancer in adjacent organs has invaded the bladder, which thus becomes secondarily affected. The varieties generally found are scirrhus and encephaloid. The former partakes of a character like general hypertrophy; the latter forms rapidly,

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is easily broken down, small particles coming away with the urine, which enables us to make a satisfactory examination. The treatment is essentially palliative, astringent as well as sedative injections to quiet the suffering; to these are added remedies which have been of service when other portions of the body were invaded.

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XXXVI.

HYDROCELE.

By John E. James, M.D., Philadelphia.

Hydrocele is an excessive secretion of serum within the tunica vaginalis testis, or of the cord, or both. It belongs to the class of exudation cysts.

Causes.—It may be congenital, when the fluid contained may be derived from the peritoneal cavity, in consequence of the non-closure of the tunica vaginalis at the internal ring.

Aside from this the most frequent cause is inflammation of a more or less chronic character.

In some cases even this seems to be absent, and no cause can be assigned. It is frequently associated with diseases of the testes and epididymis, as in syphilitic orchitis, etc.

Varieties.—1. Hydrocele proper, or simple hydrocele, when the fluid is contained within the vaginal tunic of the testis. It shows itself first at the lower part of the scrotum, in connection with the testicle, anteriorly to and extends below it. It is of slow growth, occupying months and sometimes years before it attains size enough to give great inconvenience. It is without pain, except the dragging sensation due to its weight. It is of a pyramidal shape, and sometimes so large as nearly to envelop the penis. It is usually single, though it may involve both sides at one time, and is then called double hydrocele. It is translucent, except in old cases, where the sac or walls have become greatly thickened in consequence of inflammation, or where the fluid has become mixed with blood from any cause. Fluctuation is marked, except in rare cases, where the sac is so tightly distended as not to give the evidence of fluctuation upon palpa-

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tion. The fluid when evacuated is found to be a straw-colored serum, containing albumen, the amount of albumen being dependent upon the amount of inflammation.

This variety is sometimes confounded with scrotal hernia; but hernia shows itself first at the inguinal ring, and increases from above downward, is more rapid in its increase in size, has more or less pain, with a distinct impulse upon coughing or crying, unless it becomes strangulated; so that the history of the case, mode of growth, and impulse upon coughing or crying, make it easy of diagnosis.

2. Encysted hydrocele, where the fluid is contained in a newly formed cyst-wall; is most generally connected with the epididymis; sometimes, though rarely, with the testis. Is more spherical; does not usually attain so large a size.

3. Hydrocele of the cord is usually congenital and due to the failure of the tunica to become attached to the cord in its entire extent, the fluid being secreted along the line and below the inguinal canal, giving the appearance of an inguinal hernia, with which it may easily be confounded. The fluid is of a lighter color, and sometimes contains spermatozoa.

Treatment consists of both medical and surgical measures. Various remedies have been used for the cure of this condition, but with only a meagre success, as regards hydrocele of any long standing; but in the congenital form they have yielded very gratifying results, and indeed any operative procedure is rarely necessary. While it is true that a spontaneous cure may take place, that, too, is the exception. In looking over the pathogeneses of the Materia Medica a goodly number of remedies have the symptoms. I will mention a few only which have proved curative:

Puls., in my hands, has most frequently been curative.

Graph., has a large clinical record.

Con., another excellent remedy.

Rhod., is very prominent, clinically.

There should be mentioned Calc. carb., Dig., and Iod., as very important remedies.

Surgical treatment is divided into palliation and the radical cure.

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1. The palliation is the simple removal of the fluid by the trocar and canula, aspirator, or acupuncture.

In using the trocar or aspirator, hold the scrotum in the left hand firmly, introduce anteriorly and at the lower portion of the tumor, with the point looking upward to avoid the testicle, being careful, however, that it enters the sac, and then allow the fluid to flow out by withdrawing the trocar, leaving the canula in place until the sac is thoroughly emptied.

2. To acupuncture, several needles should be inserted into the sac and the fluid allowed to drain off. This method is often curative, in consequence of the inflammation set up.

3. The radical cure is effected best by the seton, incision, or the introduction of irritating fluids.

a. The seton is a simple and the surest method. The trocar and canula are used as in the palliative method, and after the fluid has run off the trocar is reinserted in the canula, the point carried to the upper portion of the sac, and then pushed out through the integuments; the trocar is withdrawn, and through the canula, which is left in position, is passed a long probe, armed with a few strands of silk ligature. The canula is then withdrawn, leaving the ligatures or seton in position. The ends are tied, and from time to time, as may be needed, the seton is moved through the scrotum until sufficient inflammation is set up to occlude the sac. This should be watched, so that if an undue amount of inflammation arises it may be treated by hot fomentations and the administration of such remedies as may be indicated by the constitutional and local symptoms.

b. By the other method, a simple incision is made into the scrotum, the sac or tunica vaginalis is seized with the forceps, and a portion is clipped off with scissors. The cavity is then packed with dry lint for a day or two, until sufficient inflammation is aroused, when it is allowed to heal by granulation, thus occluding the sac.

c. The use of irritating substances is accomplished by using the trocar and canula as before. After the fluid has been evacuated inject about sixty drops of the Tincture of iodine, or the Compound tincture of iodine twenty drops, and water forty drops, and allow it to remain in the sac. The process of cure is

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the same, *i. e.*, arousing inflammation sufficient to occlude the sac. A number of other irritating liquids are used, but as they are less certain in their results I will not detain you by noticing them.

HÆMATOCELE, an accumulation of blood in the tunica vaginalis. We may have extravasated blood in the areolar tissue of the scrotum or cord, but that is not strictly hæmatocele, although classed with it by some.

Causes.—Direct injury, either by a blow to the parts and rupture of some of the vessels, or, the much more frequent cause, injury of the vessels of the testicle while tapping for hydrocele.

The tumor forms rapidly, gives a dark appearance to the scrotum, is not translucent; is heavier in feeling, is more doughy, especially if it has coagulated, when no fluctuation can be felt. It is painful, exciting inflammation in the sac.

Treatment.—Mainly medical, the remedies being such as will check the flow of blood into the cavity and control the inflammation excited. Prominent among them are Acon., Bell., Arn., China, etc.

If the blood remains in the fluid state, tapping may be resorted to, but no attempt at a radical cure, as in hydrocele, should be tried while the testicle remains inflamed or the blood is being extravasated. If a clot forms and suppuration threatens or has already begun, a free incision should be made, the coagulum removed, and the part treated to bring about healing by granulation.

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XXXVII.

NEPHROTOMY.

By G. A. Hall, M.D., Chicago, Ill.

Nephrotomy is most accurately defined as an operation in which a deep incision is made into the lumbar region, extending into the kidney or renal pelvis, in order to remove a calculus situated in these parts. I deem it unnecessary to discuss here the pathological conditions which make the operation necessary, as these questions will be fully and ably presented by other members of this bureau.

After careful consideration, together with a limited practical experience, I have but little hesitancy in expressing my conviction that, if a diagnosis has been made with scientific accuracy, which looks to an operation as a final remedial resort, it is not only justifiable, but directly in the line of the surgeon's duty.

The history of the operation is fragmentary. It is apparent, however, that a century ago it was brought into considerable prominence as one calculated to prolong and save life. Inasmuch as all the cases reported were such as had a demonstrable tumor connected with the history, then, as now, the difficulty of diagnosis was really the objection to the performance of the operation. The literature of the present day is of such a character as to make it almost impossible to arrange with accuracy and satisfaction any statistical tables, or to institute proper comparisons with other operations. By some it is warmly commended; others say it never ought to be allowed to pass out of the anatomical theatre into surgical practice. From the sources that are trustworthy, out of twenty-four operations ten have been successful, and the patients have been reported cured. As to the justification of the operation, then, as little can be said against it

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as in ovariotomy, extirpation of the spleen, uterus, or colotomy. In a note appended to this report will be found a full list of references on this subject. Time forbids my making extensive extracts from these published reports. (See page 470.)

The operation of nephrotomy is recommended in the following cases: 1. Nephrolithiasis. 2. Hydronephrosis. 3. Chronic abscess, chronic pyelitis, and pyonephrosis. 4. Cysts and cystic degeneration. 5. Traumatism involving the renal pelvis or ureter. The operation, as described in detail hereafter, is recommended only when either one of the above-named diseases has been accurately diagnosticated, and where there is convincing evidence that only one kidney is diseased. The following are the methods, the choice left the surgeon being dependent upon the nature of the disease and the condition of the parts. The patient is brought under the influence of an anæsthetic. If the left kidney is the one to be operated upon he is placed upon the right side. A pillow is made to furnish a support to the parts by placing it under the loins. He is then turned two-thirds over on his face. This position favors the finding of the outer margin of the quadratus lumborum muscle, which is to be the guide in commencing the operation. Begin the incision one inch to the left of the spine, below the twelfth or last rib, and passing downwards and forwards parallel with the crest of the ilium about four or five inches in length. The integument, the superficial and deep fasciæ, oblique muscles, and transversalis fascia will have to be incised before the kidney is reached. Immediately upon exposure of the organ, ascertain, by the sense of touch—palpation or acupuncture—its exact condition. If it be found enlarged, fluctuation distinct, evacuate the contents by a canula thrust into the diseased kidney at the most attenuated exposed part. Subsequently explore the cavity with a probe or the finger, to ascertain the presence or absence of calculi. If present, enlarge the opening sufficient to allow of their extraction. The cavity is then to be thoroughly irrigated with warm carbolated water. The point of opening into the organ is to be brought up to the free margin of the external incision, and there fastened with silver-wire sutures; the external opening is then closed by interrupted sutures. Free drainage is to be maintained,

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and the treatment made to correspond to that of an abscess, since healing from the bottom and from within outward is desirable. The dressing and treatment are to be similar to that of other surgical cases. This operation may be modified according to circumstances, as seemed necessary in a case in which I operated and which is reported in detail in the *United States Medical Investigator*, May 15th, 1878. In this instance I found it necessary to introduce the hand within the cavity of the abdomen, to determine the extent of the fibrous adhesions and size of the kidney. I was obliged to enlarge the opening by making a crucial incision, owing to the great distension of the renal organ. Finding it impossible to bring this organ to the external opening, the sacculated kidney was emptied of its contents by an incision and postural changes of the patient.

The operation, as performed by T. Smith, is to make a long incision at the anterior border of the erector spinæ muscle, extending downwards four inches from the lower margin of the last rib. This incision is cautiously deepened until the finger can be placed upon the hilus of the kidney, when, if thought proper, the organ can be laid open. In this operation there is very little risk of exciting peritonitis, or danger from urinary infiltration. I can recommend this operation where there is a probability of the surgeon having to remove or extirpate the organ, as it offers the easiest access to the renal artery and vein for their ligation.

Extirpation of the Kidney.—This operation is undertaken in cases more desperate, if possible, than any just mentioned, and where we find the kidney the seat of primary cancer or chronic abscess, involving the cortical substance and caused by some local inflammation in the parenchyma, or where some foreign substance has destroyed the organ to a point beyond possible usefulness, and where the system is threatened with purulent absorption. In justification of the operation it should be remembered that, out of twelve cases well authenticated, four have recovered, while serious complications in the other cases were regarded as equally potent in destroying the life of the patient.

I am willing to give it as my firm conviction that this bold operation on the part of the surgeon is warranted in wasting dis-

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eases, as, for example, Bright's disease, where pathologists will settle the diagnosis and determine when but one kiduey is involved.

As regards these operations, they, as a rule, are undertaken at a time when death has already claimed its victim, and so the surgeon's efforts have passed for nought. Should we be allowed to be governed, and to govern ourselves, in this operation as in others equally hazardous, by conservative measures, and to operate at the early moment, I am satisfied that we would be conservators rather than destroyers of life and health. It is well known that in the absence of one kidney the normal functions of the body are undisturbed, providing the remaining kidney be free from disease. This accommodation of the system to the severer losses it sometimes sustains makes it possible for these renal organs to be operated upon, and that too with the assurance of ridding the body of its diseased member, and restoring to a disturbed function healthy condition.

NOTE.—The following are some of the references to published writings on the subject under discussion:

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Deutsche Klinik, 1870. Ablation of the Kidney, by Simon; recovered.
N. Y. Medical Journal, Nov., 1872. Peters. Two cases; fatal.
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Vidal's Pathologie Externe, p. 93, 1855, advocates nephrotomy for calculus.
Bryant's New Surgery, last edition, p. 556.
Ashhurst's Surgery, p. 845.
Holmes's Surgery, new, 1878, 767.
Roberts's Urine and Renal Diseases, 381.
N. Y. Medical Journal, Nov., 1872. Dr. Peters's paper.
Medico-Chirurg. Trans., v, 52, April 27th, 1869. T. Smith's paper.
Medical Record, 1874, 409.
" " 1876, 475.
" " 1877, 55 and 474.
Lancet, London, 1874, 576.
Braithwaite's Retrospect, 1869, 1862 and 190.
Bennett's Clinical Lectures, 783.
Medical and Surgical Journal, vol. ix, 507.
Nephrolithiasis. Von Ziemssen.
London Homœopathic Hospital Reports, 1869, 431.

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XXXVIII.

VESICO-VAGINAL FISTULA FROM SYPHILIS.

By S. R. Beckwith, M.D., Cincinnati.

Sir James Y. Simpson said, in one of his lectures, that "the most distressing and deplorable of all the infirmities to which woman is liable is chronic perforation of the septum between the bladder and the uterine passages, permitting the escape of urine. So long as she suffers from this most afflicting accident her life is rendered miserable. She is not only loathsome to herself, but an object of disgust to all around her."

The accident described by Sir James Simpson is one that may befall any parturient woman, of whatever rank or position in life she may happen to occupy; and, while she mourns her unfortunate and deplorable condition, she possesses the consoling thought that her suffering and misery was the result of an accident of which neither herself nor her husband had any control; simply a misfortune that occurred to her while she was performing the most responsible and holy mission of woman's existence, viz., of giving birth to a new life.

But of the disease I am about to describe, and the accident of vesico-vaginal fistula accompanying it, some one was at fault. It could have been prevented. Syphilis never seeks its victims, but rather men and women are made victims by seeking it; and the female who suffers from acrid urine escaping into her vagina, through syphilitic openings from her bladder, excoriating and burning her flesh, after decomposing and throwing off so disgusting an odor that she is compelled to spend her life alone, has good reason to lament over her own sins, or curse him who brought her to her present condition.

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It is only a few years (within the memory of most of us) that urethro-vaginal, or vesico-vaginal, fisula has ranked as a curable disease. I well remember of having been consulted by sufferers with this trouble, and assured them that the art of surgery had no remedy for them. Their affection was too formidable to be successfully met with any means known to the science of medicine or surgery. The greatest men of all Europe had often attempted to cure the ailment, but in most cases left their patients in a worse condition than they found them, and had nothing left to offer but regrets for their signal failures.

And women with this disease might have continued in misery and suffering, and surgeons sorrowing at the insufficiency of their art, had not Dr. Marion Sims, an American, discovered, or rather instituted, a method of cure by a new and novel operation, the success of which has been verified by hundreds of surgeons in the last few years.

The grand revolution in the cure of this disease by one of our own countrymen makes us feel proud of American surgery, and its beneficence to suffering women should inspire all of us with the hope that we too, may some time, by our acts, become benefactors of our race. But, while we are stimulated to more energy by contemplating the benefits of this discovery, we should never forget the deep and lasting obligations we owe its discoverer; and, for one, I know of no words too expressive of censure for those who deprived this "truly good and great man" from continuing his professional work in a hospital that he had established in early life, and which was the pride of his declining years.

I do not propose to enter into the details of the causes, diagnosis, and treatment of vesico-vaginal fistula; all this you are familiar with, or can find it better described in books than I can do it. My purpose is simply to call your attention to the disease as a result of syphilitic ulceration.

I do so because I am not aware that the subject has ever been specially written upon, and the general opinion is that, if a fistula occurs in a syphilitic woman, it will not often unite after operation, which opinion, I think, is incorrect.

In 1859 a woman came to the "Invalids' Retreat," in the city

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of Cleveland, and placed herself under my care for treatment for a vesico-vaginal fistula. She stated that she was married, a resident of Canada, and had given birth to two children, the youngest then being three years old. Within two months after her last confinement she contracted syphilis from her husband, several chancres appearing in the vagina, giving her great pain, and discharging freely of pus. Some months intervened before she received medical treatment.

Her physician informed her as to the nature of the disease, and applied "Nitric acid" to the ulcers. After a few applications she discovered urine escaping from the vagina, and the parts became extensively excoriated. The medical attendant sent her to a surgeon in one of the largest cities of the province. He treated her for syphilis, filled the vagina with lint, and kept a catheter in the bladder most of the time. Under this treatment the syphilitic ulceration healed, and she was sent home with the consoling (?) assurance that the fistula was incurable. In the hopes of better things she came to the "Retreat."

On examination I found a perforation at least one-half an inch in length through the bas fond of the bladder and walls of the vagina. Her general health was poor, and portions of the body covered with syphilitic eruptions. I gave her Nitric acid, Aurum, and Kali hydriod.; directed her to take nourishing food and old ale.

In a few days, her condition being much improved, I freshened the edges of the fistula and closed the wound with four sutures of silver wire. The sutures were very deep, and after being tied the vaginal edge of the wound was left slightly everted. The case was treated as such cases usually are after the operation, with the addition of the vaginal surface receiving a daily application of Arg. nit., ten grains to the ounce, applied with a camel's-hair pencil. I removed the catheter on the evening of the sixth day, and no urine escaped through the wound. On the eighth day complete union appeared to have taken place and I removed the sutures. In two weeks from the date of the operation she walked out upon the grounds of the place, and on returning to her room discovered the urine again escaping into the vagina in very small quantities. I then discovered a very small opening,

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so minute it could only be discovered when a drop of urine passed. I continued the treatment for syphilis, and touched the opening two or three times with solid Nitrate of silver.

After waiting two weeks and the fistula remaining unchanged I again operated, and a complete cure followed. I used pieces of lead for bars on each side of the wound, and shotted the wire as directed by Dr. Sims.

My own preference is to tie the wire and bring out the ends beyond the vulva, as recommended by Simpson. By this means the stitches can be removed more easily than in any other way.

I have never found any serious difficulty following surgical operations upon persons having secondary syphilis, except that the wound would not unite by the first intention as readily as in other patients, and to promote union by granulation it required that the wound be treated frequently with Nitrate of silver, Sulphate of copper, Zinc, or some other equivalent; but in the case given a considerable portion of the wound united by first intention, and rapid firm granulations appeared upon the vaginal surface of the fistula under the local treatment.

CASE II.—Mrs. ——, age 30. Contracted syphilis two months before her confinement, chancres, according to her statement, appearing upon the vulva and in the vagina, she supposing they were ulcers due in some way to her pregnancy. I attended the lady in her confinement. The child was stillborn. Its body was covered with a syphilitic eruption, and on inquiring of her husband learned that he had primary syphilis, and communicated it to his wife two months previous. Her labor was brief and easy. As soon as the lochia ceased I made a specular examination, and found deep syphilitic ulceration and considerable vaginitis. Notwithstanding treatment, perforation of the vesico-vaginal septum occurred in a few weeks. I continued to treat her for syphilis for two months, when, assisted by Professor Ellis, I operated for fistula, without success, the opening after the failure of the operation being much enlarged and its edges becoming covered by ulcers. I renewed the treatment for syphilis for one year, when Professor Ellis returning to deliver his college lectures, we again operated. In this instance we inserted a greater number of sutures, and treated the edges with an

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application of Nitric acid every second day, and kept in the vagina lint wet with a weak solution of Baptisia tinct. I allowed the sutures to remain for two weeks, although the catheter was removed on the eighth day, and no urine afterwards escaped through the fistula. A complete union occurred and for several years she remained in good health, when I lost sight of the case by her removal from the city.

CASE III.—A woman of doubtful reputation, who from some cause had several miscarriages, became the patient of Dr. Robinson, of Kentucky. While I was in consultation with the doctor on another case this patient requested us to visit her. She stated that soon after her last miscarriage her urine would at times escape into the vagina, and of late the discharge was almost constant. She had syphilis before her miscarriage, and she claimed that it was the cause of the abortion. I passed a bent probe into the urethra and found a small fistula in the anterior portion of the bladder. I had with me only a pocket case, yet I concluded to attempt an operation. The patient was placed upon her elbows and knees and with a tenaculum the vagina was drawn down and out, so that I was able to freshen the edges of the fistula. Two wire sutures were used, and the wound was treated with a weak solution of Nitrate of silver. The fistula seemed to have been cured at the time of the removal of the stitches, but it soon was discovered by Dr. Robinson that it was not, although only a small portion of the urine passed through the perforation. Nothing further was done, and Dr. Robinson at present reports that very little urine escapes, and she will not consent to a second operation.

In my early surgical practice I was often consulted by patients having fistula. For the past few years I have not seen very many cases, and I am told by other surgeons that their observation is the same.

May not the present infrequency of the accident be due to the more general use of the forceps in difficult and prolonged labors, thereby preventing the fœtal head remaining for a long period in the maternal passages, and thus preventing injury to the vagina?

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XXXIX.

DISEASES OF THE PROSTATE.

By J. H. McClelland, M.D., Pittsburg.

The prostate has been regarded as an analogue of the uterus; at all events it is subject to diseases somewhat similar. In structure it is about one-third glandular and two-thirds unstriped muscular tissue, with a tough fibrous envelope. It is, therefore, subject to hypersecretion, hyperplasias (fibroids or myomata), and hypertrophy, in a manner similar to the uterus.

It is unnecessary at present to discuss the anatomy and formation of this organ; but, if we keep in mind its position and relation to contiguous parts, many of the rectal, vesical, and urethral symptoms which accompany prostatic affections find ready explanation.

We will consider, in brief, the following affections of this gland:

Inflammation, acute and chronic.

Abscess.

Hypertrophy, atrophy.

Malignant disease.

Tubercles and cysts.

Acute inflammation may be primary or secondary. The first is usually traumatic in origin, the result of a fall or blow, or, more commonly, the mal-use of catheter or sound.

The second oftenest arises from an extension of gonorrhœal inflammation, but may also be caused by irritating drugs and an excess of venery.

The symptoms are referred to the neck of the bladder, such

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as difficult and painful urination; acute throbbing pains in the perinæum, rectum, and through to the pubis. The passage of the catheter is painful, and examination *per anum* reveals a highly sensitive and swollen condition of the organ. The prostate is not very commonly the seat of acute inflammation.

Treatment.—Prompt measures are necessary to prevent a destructive termination. Hot sitz-baths and perineal poultices, slippery-elm or flaxseed tea, thrown in moderate quantity into the rectum and retained, has a most soothing effect. Where there is retention of urine the soft gum catheter should be employed. If the catheter cannot be introduced without considerable force, the bladder had better be emptied by the aspirator, puncturing above the pubis. The indicated remedy acts quickly and efficiently in this affection.

Belladonna.—Acute throbbing pain and great sensitiveness. Vesical tenesmus.

Arnica.—Of traumatic origin. Soreness and pain not so acute as under *Bell.*

Cantharis.—Inflammatory action violent, with constant vesical tenesmus.

Mercurius corr. or *sol.*—Inflammation extending to adjoining tissues. Rectal and vesical tenesmus.

An unfavorable termination of the inflammatory process is in *abscess.* This is ushered in by rigors and increase of swelling. The most favorable and likely point of discharge is the urethra; but it may open into the rectum or through the perinæum. When the evacuation of the abscess is long delayed the prostate is badly damaged.

The remedies most likely to be called for are Merc. and Hepar.

Chronic Inflammation of the Prostate.—This affection is not, as a rule, the sequel of an acute inflammation, but is usually a slowly progressive disease, occurring in those of sedentary habit, and may be caused by excess of venery, onanism, stricture of the urethra, or the irritating effect of vesical and prostatic calculi. Some of the leading symptoms are an uneasy aching in the perinæum, extending perhaps to the hips and thighs, which feel tired. The introduction of a sound, and examination *per anum,*

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show a sensitive condition of the organ and slight enlargement. There may be dysuria, and an almost constant symptom is the clear, glutinous discharge, especially when straining at stool. The patient is easily tired and has marked mental characteristics, much depressed, imagines the discharge is semen, and that the loss is undermining him mentally and physically, which is only true to a limited extent. When the prostatic discharge is considerable these cases have been designated *prostatorrhœa;* but a better name for many cases of this class, I believe, would be *irritable prostate*,—a name descriptive not only of the conditions present, but suggestive of a correct treatment.

The treatment is tedious and troublesome. The sufferers should have the true state of the case explained, and their minds disabused of much of the dread under which they labor. The malady is by no means a mortal one. The irritable state of the prostatic region may be greatly subdued by the daily passage of a good-sized steel bougie.

The remedies most useful in my hands have been Gels., Phos. ac., Sepia, Selen., Puls., Sulphur.

Hypertrophy of the Prostate.—This is essentially a disease of old age, rarely noticed before the fifty-fifth year. Some well-marked cases of enlargement occurring in persons under fifty years old I have attributed to chronic inflammation. Typical hypertrophy is non-inflammatory.

Hypertrophy of the prostate may be either *simple* or *numerical*, —the former merely a swelling of the gland, the product of inflammation; the latter an increase in the individual elements, the adventitious tissue being, as a rule, similar to the normal, as in uterine fibroids. The product is usually non-inflammatory. Either lobe (lateral) or the connecting commissure (sometimes called the middle lobe) may be the seat of this enlargement, the latter creating the greatest amount of urinary distress.

The symptoms have been often misunderstood, especially those relating to the bladder.

Early in the case there is increased frequency of urination, particularly at night; with stone in the bladder it is most frequent in daytime, or during exercise. In urinating the force of the stream is diminished, not the calibre, as in stricture.

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When the gland becomes very large, or the middle portion (isthmus) is particularly affected (constituting "the bar"), the bladder is liable to be but partly emptied; there is residual urine. As a result it gradually becomes more and more distended; there is loss of tone or paralysis. The patient now suffers with incontinence, a mere overflow from a distended bladder. This symptom or condition is very liable to be misunderstood. The catheter should be used with conjoined pressure over the pubis, and the bladder emptied, not all at once, if the distension has been great. A flexible gum, vertebrated, or spiral steel catheter should be employed when it can be done successfully, or a long catheter with a large curve. It will be observed that the catheter does not enter the bladder short of eight to ten inches;—a stricture will be recognized within six inches of the meatus. In making diagnosis two fingers should be introduced into the rectum while the catheter is *in situ*, and the size and shape of the gland carefully noted. It may have attained the size of one's fist, inducing a sense of weight in the rectum (Sepia), flattened stool, vesical and rectal tenesmus.

Treatment.—The bladder will have to be emptied with the catheter, in marked cases, once a day at least, perhaps three or four times, the patient being taught its use, as it may have to be used during the balance of life.

Internally the following remedies have done service, viz., Coni., Sepia, Puls., Selen., Graph., Merc. iod.

Atrophy of the prostate produces little trouble, is of a negative character, and is merely mentioned here because it has been observed.

Malignant disease seldom affects the prostate, and is generally of the encephaloid variety. The treatment is similar to that for other malignant affections, and equally discouraging. The Iodide of arsenic is suggested.

Tubercle is also rarely found in the prostate, and is always secondary to that in the lungs, kidneys, and testes.

Cystic disease, so called, is common in aged persons. These cysts are merely cavities formed from closed follicles, and frequently contain calcareous concretions, or calculi. No treatment is suggested, and mention is only made for the sake of completeness.

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APPENDIX.

DISCUSSION.

FIRST DAY—MORNING SESSION.

DR. N. SCHNEIDER: I would say, in reference to the two operations, that lithotrity, to a certain extent, is a new operation; it has an antiquity, yet it is new to the majority of surgeons. And this being the fact there is a good deal more claimed for it than is justifiable; the statistics given in the paper just read are not such as you could really base an opinion upon.

Now, there is a condition that you find, especially in cases of lithia, where lithotrity is advocated, that has not been taken into consideration by the advocates of this operation, and that is the condition that the bladder is in owing to the irritation from the presence of stone. When a man has been affected in this manner for months, or perhaps for years even, you will of course find these peculiar pathological changes taking place in the bladder, viz., thickening of the mucous surfaces, more or less superficial irritation, and you will find in the urine that pus is constantly being passed, showing that the mucous surface has become, to a certain extent, a pyogenic membrane.

Now, in cases of lithotrity, although you may remove the stone, still that irritation or the condition of the bladder is not relieved as it is in the case of lithotomy; for in lithotomy you have a free opening, so that the bladder can relieve itself completely, and you can drain it and drench it with medicated solutions, with water, or whatever you choose, and there is but seldom any trouble in the healing of the wound. As you but seldom have fistula forming after the operation of lithotomy, there is in the end a much better result. Altogether, then lithotomy is much better than the operation of lithotrity for the above reasons; that is, you do away with the chronic inflammation of the pyogenic membrane and the mucous surfaces of the bladder, which is very apt to be left after a case of lithotrity.

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This point has not been enough taken into consideration by persons who have written on the subject.

DR. CLARKE: I would like to ask if he commends the method of Dr. Biggar?

DR. SCHNEIDER: I have never operated in that way. All I know of the operation is what I have heard from others.

DR. HALL: The next paper was on phimosis and paraphimosis. That is a simple, practical subject, and one that every practitioner meets with. We would like to have some expression of opinion in regard to that. There were some good points in the paper that should be considered.

DR. FISKE: In my description of the operation for circumcision I advised that we draw the foreskin forward, and clip it off transversely, and not holding the skin at all, allow it to retract; then the mucous membrane being elevated, it is to be slit up back to the skin, which is on the line of the corona; finally the angles are trimmed off on each side, leaving the mucous membrane and skin in position.

DR. SCHNEIDER: There are one or two points in the paper that I would like to touch upon; in reference to the statistics I should particularly like to say a word, *i. e.*, regarding the prevalence of venereal diseases. Dr. Fiske has given some statistics that seem to me to have very little bearing upon the subject; I think they should not be put down as statistics, as he has taken into consideration simply the sum total of persons afflicted with syphilis and gonorrhœa. He compares the number of Christians that are affected with the number of Jews. Now, it is very likely that the relative number of Christians is greater than the relative number of Jews; that is all. If we had a thousand Jews and a thousand Christians which we could compare, I think you would find just as many cases of gonorrhœa among the Jews as among the Christians.

DR. FISKE: I had reference to the liability to contract syphilis.

FIRST DAY—AFTERNOON SESSION.

THE CHAIRMAN: The paper on "Hydrocele and Hæmatocele," which has been read, is now the topic for discussion.

DR. CORNELIUS ORMES, Jamestown, N. Y.: Mr. President, I am somewhat familiar with this operation. I have operated a good many times for hydrocele of the scrotum and of the cord. My mode of operation has always resulted in a radical cure. I have sometimes introduced a seton after performing the operation. Again, I have sometimes introduced a catheter for drain-

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age, compressing the walls of the sac until they adhere. That has been my most frequent mode. I operate low down, below the place for the operation for extraction, continuing it down to the lower part of the scrotum; compressing the walls, as they come together, so as to have adhesive inflammation produced. Then the wound heals up. I have never failed but in one instance. I failed in an old gentleman, and could not get a perfect cure. I could not prevent its filling up again. In hydrocele of the cord it is better to lay it open and to use a long instrument. Put it into the lower part of the wound, pass it in and up to near the inguinal ring, and leave it in there. That cures it. It cures hernia in like manner, passing it up in the same way. I think that is the best method of treating hæmatocele of the cord. It has been my experience, as well as the experience of others who have performed the operation successfully.

Dr. Fiske, Brooklyn, N. Y.: I was in hopes, Mr. Chairman and gentlemen, that Dr. Dake, of Lockport, would be here, and that we would hear that paper, which he suggested a few years ago, for the treatment for the radical cure of hydrocele. The treatment for the radical cure of hydrocele, which, in my hands, and in the hands of a number with whom I have spoken, has proved successful, is so simple that I beg the indulgence of the society for getting up at this time to speak of it. Instead of evacuating the fluid from the sac the procedure was simply to take an ordinary hypodermic syringe, and introduce ten or fifteen drops of pure Iodine, without drawing out any of the fluid. This plan is pursued in men who are not able to be laid up for any length of time, as they are very liable to be in many of these other operations. It is a very easy, very comfortable, and very successful mode of operating. Out of five cases that I have operated on in that way I made in three of them radical cures, although they were cases that had been repeatedly tapped. Those that have had experience commend this method, and say that cases that have been tapped are hard to cure. I would call attention to this as one of the most simple and efficient means for a radical cure.

Dr. Clement Pearson, Washington, D. C.: I did not hear the paper read to which reference has been made; but it occurs to me, from the remarks made by the gentleman who has just spoken, that nothing but mechanical means are thought to cure hydrocele. Perhaps if I were to tell you that it could be cured permanently with medicine only, and with highly potentized medicine at that, given at long intervals, you would scarcely believe it; but such is the case. What would you have thought of this if it had been told you twenty-five years ago? If any

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man had come to me and had said in my presence that it could be done, I would not have believed him. I can only narrate what I do. I tell you I cured a case of this trouble during the last five or six years, where the fluid had accumulated in the tunica vaginalis. It was a very serious case, worse than mere hydrocele, very much worse, as the testicle itself was involved. But I cured it permanently inside of six months with Silicea, the 2000th, one dose given every week. (Great applause.)

Dr. N. Schneider: Mr. President, there are one or two points that I would mention in reference to this paper, the treatment of hydrocele, and the method that I have adopted in treating it radically. I call it radical, and the plan adopted is this: with the aspirator I simply evacuate the sac, and then depend upon a treatment which I call specific. I can show there is philosophy in it. We know that in considering the pathology of hydrocele we shall find the tunica vaginalis constantly secreting a fluid. Now there is some cause for this. Whether traumatic or idiopathic, the balance between the secreting and absorbing power of the tunica vaginalis is lost, and the secretion goes on constantly, but absorption stops. This is the cause of hydrocele. The tunica vaginalis continues to secrete constantly, but it ceases to excrete. Now, after drawing this off, you then restore the balance of power by your indicated remedy, and this can be done in a great many cases. I have cured a number of cases simply by drawing the water off by the aspirator, and giving the indicated remedy. Apis mellifica has more influence there than anything I know of. I have cured several cases with the Apis. I have used from the 1st to the 3d,—nothing higher than that,—but have sometimes given the tincture. I do not know whether it would have cured in the 2000th, or the 200th, or the 30th, yet, because I get my effect with the 1st or the 3d, I feel justified in using it, just as I suppose others are in using the 200th.

Dr. David Thayer, of Boston: How often do you repeat it? and how long? and does it return?

Dr. Schneider: There is no return. I give the dose four or five times a day.

Dr. Thayer: I would ask if Dr. Schneider aspirates more than once.

Dr. Schneider: Only once.

Dr. F. R. McManus, of Baltimore: Mr. President, I have not had a great deal of experience in the disease under discussion, but I recollect distinctly a case that I had, about four years ago, which was the result of a mechanical injury, a blow upon the affected part. I gave my patient the 30th dilution of Arnica,

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to take two doses one day and two the next day. I was going to enjoin upon the patient absolute and undisturbed rest, but I thought I would wait for a week, lest I might attribute the cure to the rest, instead of the medicament. In twenty days he was entirely cured by four doses of Arnica. (Applause.)

DR. HALL: I would like to speak before the bureau is closed, if no one else desires to take the floor. I was very much interested in the paper, but there are some points to which I would take exception. The paper was on the *radical* cure of hydrocele. Being in the surgical field it was the purpose to report only those cases which required such treatment. We are all aware that we have cases, both congenital and traumatic, cured with remedies, and we also know that many cases get well themselves without any remedy. Those cases resulting from a bruise, or from a strain, will in a short time subside spontaneously if the patients are healthy and in perfect order. We are now dealing with those cases which, instead of being of the size of a testicle, or of the size of a walnut, have grown to the size of a large egg-plant, containing one, two, three, or four pints of serum or albuminous fluid. For in those cases, especially where the sac has been opened repeatedly, and where from long standing we have a large amount of irritation, the difficulty has become very much greater and the parts are deeply involved. Under such circumstances Apis is the only remedy I have administered, with good results. I have given it in congenital hydrocele. I have drawn off all the fluid and strapped the testicle. But I claim there is only one operation that can strictly lay claim to the term of effecting a radical cure. I do not believe that the treatment by Iodine injections is a radical cure, and I am sure that our statistics will bear me out. We have had a great many of these cases reported, and the statistics are accessible. Now take the report of the surgeon-general of the army, where a large number of cases are given, where a thousand cases were reported, and you will find that in all these but a very small per cent. has been cured by injections of Iodine. My paper explains my position exactly. I will not go over the ground, but will simply say that a radical cure may be effected by the excision of a certain portion of the tunic. I do not believe there is any greater risk attending the course of this operation than that of injecting. It is certainly much less than straight incision. As I understood Dr. James in his paper, if I am not mistaken, he simply made a straight incision and took out a piece. I agree with the doctor in that, but should not take that method alone. I find it desirable to control, rather than to treat. I have never found a case where there has not been an inflam-

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matory condition. The trouble arises from the inflammation running to great excess, and this may continue under the very best of care. I do not think that a case properly operated on will ever recur. I believe the above is radical and permanent, and that it is the only operation we have which can be said to be every time permanently curative. I admit that patients get well with injections of Iodine, and where setons are used; but I do not believe it is so certain and positive as the excision and the long incision. If I had a tunic distended where it was holding one, two, three, four, or five pints of fluid, I should excise a portion of it. If you do not, after the tissue has been opened and the fluid drawn off the parts will adhere along the marginal surface, and, still remaining in that pathological condition, another sac will form upon the side, and you will have a recurrence, not to the extent of the first, but always attended with more difficulty than the first. I think that excision of the tunic is the only radical cure that we have, and I should not use any other mode.

On motion, the discussion was closed.

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SECTION VII.

REPORT

OF THE

BUREAU OF ANATOMY AND PHYSIOLOGY.

H. B. VAN NORMAN, M.D., CHAIRMAN,	Cleveland.
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A. R. THOMAS, M.D.,	Philadelphia.
E. H PRATT, M.D.,	Wheaton, Ill.
H. M. PAINE, M.D.,	Albany, N. Y.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER XI.

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XXXII.

HEREDITARY DESCENT.

By H. B. Van Norman, M.D., Cleveland, Ohio.

If diseases can be transmitted from parent to child, why not have hereditary rules published for the marriageable to read, ponder upon, and, of course, profit by. If blood can be examined by the scientist by the microscope, and the blood-corpuscles of the inebriate discerned from those of the healthy life-giving fluid of the temperate man; if alcohol produces such morphological changes in the blood as to act specifically upon the coloring-matter in the red corpuscles, causing them in many instances to become colorless, distorted, shrunken, and in some cases completely broken up; if it produces a parasitic vegetation in the fluid of the blood, which can be discovered by the powerful microscope in the hands of Dr. Harriman, ought not these facts to be presented to parents, and to teachers of moral as well as secular education, that young people may be brought face to face with the penalties of intemperance?

If the blood of the drinker be impure, and if his brain and nervous system be hardened and perverted by alcoholic drinks, why should he not be forbidden the marriage relation?

What young man knowingly will go astray when it is positively ascertained, by scientific investigation, that the blood coursing through his veins can be examined, and the truth as to its purity be found out and announced to his affianced bride, and that the things done in secret can be proclaimed upon the housetop? Will she knowingly marry a man whose blood is loaded with

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syphilitic spores? The germs of a dissolute life can thus be discovered, and the wrecks of many lives averted.

Were it possible to endow all childhood with a healthy, wise, and pure parentage, away from all passion and accident, and place it wholly in the domain of a sanctified love, our world would soon put on garments of gladness and beauty. But how are many children conceived? By *love* and *purity?* No; but in *sin* and *lust.* Is one child in a dozen welcomed? Does not "accident," even in married life, attend many of the circumstances connected with childbearing? I pity the unwelcome baby when I hear the mother say, as soon as it inhales the breath of life: "I *hate* it! It is not of my doings, but of my drunken husband's. O! doctor, what shall I do; I am bound to a licentious man, and must yield or be abused, and unwelcome children are the results?" This wail comes from more hearts than one in our land, and yet no one can interfere, as she is his lawful wife, and in many cases he considers her his property, to be used and abused as seemeth him good.

I am under obligations to Dr. Baer, of Richmond, Ind., for the following propositions:

"1st. Parents cannot impart to their offspring what they do not themselves possess at the time of copulation.

"2d. All parents impart to their offspring what they themselves possess at the time of copulation, but of course in certain potencies according to circumstances.

"3d. When both parents possess a like difficulty the offspring rarely lives to puberty, as the inherited disease becomes active after birth, and progresses with more or less activity and certainty until death closes the scene early in life.

"4th. When only one parent is affected, the offspring, being the weaker party, holds the disease in latency, which may or may not develop during a long lifetime.

"5th. When the parent affected is the stronger one magnetically (for it is by this power alone that transmissions are potentized) then the disease will surely manifest itself in the offspring, as it will be in direct potency.

"6th. Heredity may be broken up, or materially modified, by marrying directly opposite temperaments of healthy constitutions.

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The same temperaments throughout should never marry. Similar temperaments, if not too much alike, may marry without much danger, but purely dissimilar temperaments always do well, and produce, if healthy, the noblest offspring. A disregard of these principles is apt to produce second- or third-rate offspring."

The doctor continues, and asks the question, "How shall we improve our race?" The answer is, by obeying known laws of the physical and intellectual nature when choosing companions for the propagation of mankind.

But how shall the rising generation be instructed in the principles of longevity, heredity, temperament, health and disease? I answer, by teaching these in our public schools. What more fitting places are there to learn, early in life, the great principles of physiology and hygiene than in our schools? Let it be taught by lectures, and made simple and plain by apparatus and illustrations. Let children learn the principles of life and health in this manner, as well as by physical culture and exercise, so that the body will be strong and tough, and, as a consequence, hereditary diseases less frequently developed. Our present system of education directly assists in the development of disease, by cramming the brains of children to overflowing, and allowing the body to suffer in consequence. This generation would do well to return to the Greeks and Romans for an example in the development of the physical stamina of the American nation. While I am in favor of education to the highest possible degree, I cannot consent to an educated brain at the expense of a debilitated, worthless body.

Children need a physical development at all hazards. If they can hold but one, give the preference to a thorough physical education. Innumerable instances of the following illustrations could be given by physicians everywhere. I know of some people in Montgomery County, Ohio, who, being of similar temperaments, have intermarried, where eight in one family are blind; and in other families of the same connection imbecility, elephantiasis, and chorea exist to an alarming degree. We have two families in this locality where the parents on both sides were predisposed to pulmonary diseases. One of these families

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had seven children, every one of whom died from phthisis pulmonalis as they reached puberty; of the other, parents and children have all died with pulmonary diseases. In my own family, continues Dr. Baer, myopia has prevailed for eight generations, and how much farther back I know not. In my father-in-law's family crooked elbows with depressed and shortened necks have prevailed for three or four generations. There is a family here whose chief characteristic, for four or five generations, has been stammering. I have been well acquainted with a family for thirty-five years, all of whom have been subject to spasms when young, and the grandmother says "it has been so for at least six generations on both sides of the house." Another family has been troubled for forty years with an eruption of the skin, and they inform me that this has appeared for ages back. I know another family where every one is bow-legged, and am informed that this mark has been handed down for generations. And still another family, whose characteristics for generations back have been a double row of under teeth. I had a singular case of a lady who, finding herself pregnant, called my attention to a cancerous tumor growing on her left breast below the nipple, perhaps the size of a large goose egg. I removed it, and the wound healed nicely. When her term was completed she gave birth to an otherwise healthy child, but he was entirely void of a proper cuticle. This man, now over twenty years of age, has the same conditions as at first, an oozing of plastic lymph over the whole body, which remains without any natural covering. What the result will be I am quite unable to predict.

Depraved Heredity.—In Greene Township, Shelby County, lives perhaps the most miserably wretched family in the State of Ohio, illustrative of the wicked folly of continued intermarriage of relatives, and of living like the brutes. This family consists of father, mother, and seven children, and living with them is an innumerable number of cats and dogs. The two eldest daughters are scarcely capable of taking care of themselves and waiting on the invalids. Two of the girls, aged sixteen and fourteen, with a boy of thirteen, suffer from frequent and violent convulsions, during which time they snarl, whine, yelp, howl, or bark like a dog. During other and similar paroxysms they

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utter sounds like the purring and mewing or the cries of a cat. The parents are deformed and palsied, and have but little intellect. They are first cousins, and descendants of relatives by intermarriages for generations. Their children have been fed from the same dish with the cats and dogs, and all have occupied the same beds.

Such a striking illustration of our subject needs no comment.

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APPENDIX.

DISCUSSION.

FIRST DAY—MORNING SESSION.

Dr. William Owens, Cincinnati, O.: Mr. President: I am prepared to take two sides on the paper just read. First, we must all admit the inherent vice which may be transmitted from parent to child,—that a depreciated constitution of the parent will transmit a vitiated constitution. Hereditary transmission is an admitted fact by the profession and by popular consent. Another proposition which has been made and established by the paper is, that over-indulgence in the use of alcoholic liquors tends to produce physical disability. The report made to the American Medical Association at Washington in May, 1858, particularly demonstrated these propositions to be true. Dr. S. M. Bemiss, of Louisville, Ky., was appointed a special committee to report upon consanguine marriage, and he made a full report on the subject.*

He separated these consanguine marriages into different classes, —into those of incestuous commerce, of the first, second, and third cousinships,—stated, as far as could be ascertained, their habits of life, etc. The aggregate results of children born from such parentage, where the parents were addicted to the use of liquor, showed that a very large percentage of the offspring were in some way, either mentally or physically, defective. To that extent I agree with the paper; but here I beg leave to take issue, for, in consanguine marriages, where the parents were not addicted to the use of liquor, or to dissipation of any kind, a much smaller percentage of defective offspring was found; and those children of parties of the second generation from them had a still smaller percentage, tending to show that this thing was not

* I would here refer the reader to this carefully prepared paper, and the statistical tables accompanying, as found in the *Transactions* of the American Medical Association, vol. xi, pp. 321–425, inclusive. J. C. G.

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transmitted to the extent that is claimed for it. To go further and apply this principle of physiology, not only to man but to animals, we find that the fancy stocks are those which are bred in and in, father and daughter, mother and son. In the fine-blooded stocks of England, this is the record in regard to the fine Devon stock, the fine sheep and fine hogs; they are bred in and in. That is a principle that has been entirely overlooked. It is a matter very easy to be ascertained; besides, if you refer to those nations who have intermarried through their families from time to time, I may say from time immemorial, that this is the case. Among the Germans, and there is no nobler race that ever lived on the earth, you will find that this has been done. You will also find it the case if you take the Celtic stock and the descendants of the Celtic families. There are no healthier people to be found than they are. Take the well-known Sclavonian races of Eastern Europe, and you will find the same practice has been continued from time immemorial. The law holds good; the result is the same. These are matters that you can think over at your leisure. You cannot pass them by by citing a single instance of this or any other principle. The principle still remains true, and the law remains true, for men as well as animals. If you have two elements defective in themselves the tendency is to further degeneration; there is no question of it.

DR. MORSE: I would like to make a single statement in contradiction to Dr. Owens; it is, that they do not use the son of the father and the daughter of the mother of the same breed. They take one of the same stock from another line and breed in, in order to preserve its integrity and purity. I simply call attention to the point of the breeding-in of stock. Take the horse; the daughter of the horse would never be allowed, by a good stock owner, to be covered by her father. They allow some other horse to cover the daughter. In the matter of sheep raising or cattle raising the same plan is pursued with all lines of stock. I admit that the Devon stock is bred in, but I deny that in this way you get the purest stock.

A MEMBER: I would like to ask if Dr. Owens recommends consanguine marriages?

DR. OWENS: I don't know that I have any recommendation to make.

On motion the discussion closed.

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SECTION VIII.

REPORT

OF THE

BUREAU OF PSYCHOLOGICAL MEDICINE.

T. L. BROWN, M.D., CHAIRMAN, ... Binghamton, N. Y.
J. D. BUCK, M.D., ... Cincinnati.
GEORGE W. MOORE, M.D., ... Springfield, O.
C. T. CANFIELD, M.D., ... Titusville, Pa.
N. A. PENNOYER, M.D., ... Kenosha, Wis.
SELDEN H. TALCOTT, M.D., ... Middletown, N. Y.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 6.

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XIV.

IMPEDIMENTS TO BRAIN FUNCTION IN MELANCHOLIA.

By W. M. Butler, A.M., M.D., Middletown, N. Y.

Sorrow and sadness are ugly facts in the play of human existence, and it should be the policy of man to educate nature to conceal them. Without these, life were a bright comedy and the pantomime runs on merrily enough. Once introduced, Harlequin lifts his visor, Columbine disappears, the jest is frozen on the clown's lips, and the hand of the gayly filching Pantaloon is arrested in the act.

General causes, natural or supernatural, when influenced by a disordered system and unopposed by a firm will, may affect the imagination, pushing sadness into melancholia, making it a settled, and not a variable mood of the mind. Instances of the complete sway of this form of insanity over the mind of man, are chronicled from the earliest ages by poet, pagan, and papist, though the cause is variously ascribed to their Nemesis or their saints.

We read that Censor Fulvius was driven mad by a decree of the angry goddess as a punishment for untiling the Temple of Juno to cover a new one of his own which he had dedicated to Fortune, and that he "grieved even unto death with sorrow and heaviness of heart." Poets picture it when, amid the storm and thunder, the earth opens and Prometheus, with the rock to which he is chained, sinks into the abyss.

Pontifical writers tell how an early king of France died from grief, after years of remorse, at having uncovered the body of St. Denis.

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The Psalmist David records, "I roar for the grief of my heart." In a more practical age we suspect that Censor Fulvius received a sunstroke on the top of his new temple, in his warm climate; that the king of France had been overtasked in mind by his premier and in body by his wines, and that the Psalmist had exhausted his corporeal revenues in the many avenues of his agitated life.

In thus ascribing melancholia mainly to physical causes, let us more fully consider its mode of attack and progress.

Melancholia, insidious in its approach, with at first but slight deviations from health, is often treated by patient and friends as temporary and of slight importance. In the midst of happiness and prosperity, a sudden feeling of gloom settles down upon the individual. Former enjoyments lose their charm; accustomed pleasures no longer amuse; all surroundings become distasteful, all friends uncongenial; life itself is a burden. No argument and no effort of the will avails to dispel it. Deprived of sleep, with appetite variable or entirely lost and digestion impaired, the physical health daily deteriorates and the depression deepens. Vainly looking about for some cause for this sense of discomfort, the mind readily grasps any framework of the imagination, and delusions appear. Tried friends are pronounced enemies; poverty is imagined present, and starvation of self and children imminent; or, disregarding a long life of piety, the soul is declared lost and the devil sole monarch. Like the sword given by Hector to Ajax, which so long as he fought against his enemies served for his help and defence, but when used beyond certain limits turned into his own bowels, so the God-given mental weapons of man, if legitimately employed, make him invincible in the turmoil of life, but if perverted ruin and confound him.

With this cursory view of the disease, as a whole, we propose to treat in detail of some of the impediments to brain action as they appear, and the individual effects of each.

Among the most important are the impediments arising from a disordered condition of the circulation. When any marked change in the quantity or quality of the blood occurs, the brain

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reveals the fact at once. A close examination of nearly every case of this disease discloses marked impoverishment of the blood. Poor in quality and deficient in quantity, the brain, failing to derive its accustomed nourishment, refuses to meet the demands made upon it. Cold feet and hands, and a general bluish tint of the skin, testify to the excess of venous blood and deficient oxygenation. Deprived of the normal amount of red globules, we find not only a lack of calorific power in the general body, but a manifest deficiency in the stimulus needed for healthy vigorous action of the brain. Thought, as well as bodily movement, is sluggish and inefficient. Lacking the energy to adopt measures necessary for remedying the evils already begun, the condition daily grows worse until the brain becomes incapable of healthy action. Deprived of their accustomed and needed nourishment, the tissues of the brain undergo change and the condition becomes one of permanent disorder.

Nor is the blood alone affected; the heart and the circulatory apparatus is involved. Poorly nourished, the sympathetic system soon begins to fail in its office, and the action of the heart and its accessories become enfeebled, and the blood loses its accustomed speed. This fluid, already impure, failing to return in needed quantity to the great regenerator, the lungs, the veins soon become distended, and a state of venous congestion obtains. Hence, deprived of its normal stimulus, a state of mental and physical lethargy supervenes, vigorous mental thought and action become impossible, and everything is viewed through a colored medium. If this obstruction continues, the vessels become overdistended, effusion occurs, and the nerves are subjected to unwonted pressure; abnormal sensations arising, falsely interpreted by a weakened mind, form the basis of innumerable delusions of every conceivable variety. Noises in the ears, sparks and flashes before the eyes, are no longer regarded as physical symptoms, but become human voices, angelic displays, or works of the devil. Nor are these effects alone manifested in the brain. Other organs become sufferers, and, impeded in their functions, help to increase the general disturbance.

Organic lesions of the heart may also exist, and, through obstructions or defects in the valves, or degenerations of the

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walls of the organ itself, produce more serious impediments to normal brain action.

Equally mischievous and more common changes are the different degenerations, fatty, atheromatous, and calcareous of the cerebral arteries. When these lesions arise a necessarily permanent interference with nutrition obtains, causing marked disturbance or entire loss of action in the cerebral cells wherever these vessels are distributed, and a corresponding effect upon the mind.

That a direct relation exists between the respiratory apparatus and healthy cerebration is constantly apparent. One need but ascend from a damp and foggy plain to the clear and invigorating atmosphere of some lofty cliff to be convinced that the brain is largely dependent for its healthy action upon the proper inhalation of pure air by the lungs. The effects upon temperament, disposition, thought and action produced by different climates and atmospheric changes have long since been established by unimpeachable observations. That in certain atmospheres the brain is capable of performing feats which in others are impossible there can be no doubt. The historic invincibility of the Swiss mountaineer, ever triumphant over his lowland enemies, has been due, in great measure, to the stimulating courage-inspiring air of his alpine cliffs. That we are largely dependent upon the lungs, and the material with which they work, not only for our best intellectual creations, but for daily contentment and happiness, cannot be too strongly impressed upon our minds. The opinions we form of our neighbors, and the views we take of life in general, often depend more upon the amount of pure air we breathe, and the manner in which it is utilized by our lungs, than any other circumstance. Hence any obstacle to the free and healthy action of the lungs must interfere with the operations of the brain. Destroy a large amount of the cellular substance of the lungs, or in any manner interfere with their purification of the blood, and, to that extent, will you aid in bringing the mind into a state of gloom and depression. The fact that one-third of the deaths in melancholia arises from phthisis, and that numbers also succumb from gangrene of the lungs, shows the important part played by affections of the lungs in this disease. From the patient's lowered vitality, the lungs

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are liable to undergo destructive metamorphoses, and in proportion as these increase the mental gloom deepens until the patient succumbs.

The close sympathetic relations existing between the brain and digestive apparatus renders the proper performance of digestion of the greatest importance to the health of the brain. Abundantly supplied by the nerves of the sympathetic, the slightest disorder of function is at once reflected in the brain, clogging all intellectual activity. Nor is this disturbance alone manifested through these agents. The bloodvessels failing to derive their necessary amount of restorative material from the imperfectly transformed ingesta, soon make the fact manifest to all their dependent organs. The almost universal prevalence of digestive disorders in melancholia caused the ancients to ascribe to them, and especially to the liver, the sole causative agency in this disease. Modern research has failed to fully establish this opinion, but of the great importance of these disorders there can be no doubt. The liver having long failed to secrete and excrete its normal amount of bile, the blood becomes depraved, the bowels sluggish and inactive, and a general feeling of pain and discomfort constantly exists, not only in the organs themselves, but in their remote sympathizer. No organic lesion may exist in the intestines, yet the sensations of weight and distension produced by the gases generated from the fæces there accumulated are at last regarded as irremediable, and often become the basis of fixed delusions. The patient declares himself inhabited by animals, or possessed by the devil, and in vain having demanded an operation for relief, may inflict upon himself serious injuries.

No one who has observed the decided mental changes produced by the advent of puberty can doubt the influence of any remarkable changes in the sexual organs upon the cerebral functions. The mental languor and depression which in many cases attend each normal menstruation attest the marked effect which this function exerts upon the brain. When, from any cause, the physiological action of the ovaries is interfered with, and the discharge is abnormally diminished or increased, this mental languor and depression is increased, and may become a condition

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of disease. There are some cases of melancholia in which no disturbance of menstruation exists, still these may be regarded as exceptions. These menstrual derangements, accompanied by a constant, profuse leucorrhœa, and attended by displacements of the uterus, vitiate and impoverish the blood, lowering the vitality of the whole nervous system, so that the brain is unable to throw off the burden cast upon it.

Among men the common practice of onanism, and the frequent involuntary emissions resulting therefrom, produce a no less grave result. Hence, in the generative organs of both sexes, we encounter most grave obstacles to the removal of melancholia and the restoration of the normal functions of the brain.

In the remainder of this article we shall devote ourselves to a consideration of the means which have proven most effectual in the treatment of melancholia.

Treatment.—The complexity of conditions present in melancholia render it impossible to lay down a plan of treatment universally applicable. Each case must be studied individually. Not only present symptoms, but the peculiar causes and conditions which have produced them, are to be considered. Everything which can in any manner suggest morbid fancies and delusions is to be removed. The mind must be diverted into new channels; hence separation from home and friends is usually of the highest importance. New and pleasant surroundings should stimulate and enliven the mind while the body is being restored to its normal strength and vigor.

The lowered vitality and venous condition of the blood demand an abundant supply of pure air. We therefore find the tonic mountain atmosphere, rich in ozone, and free from all malarial influence, in the highest degree beneficial. Exhilarating and pure, it seems to give new life and vigor to the body, and a corresponding elevation to the spirits. In marked contrast is the effect of sea air. Heavily freighted with its salt vapors it adds increased weight to the already burdened soul, and plunges the sufferer into still deeper gloom.

No part of the treatment is more essential than the diet. The continual mental and physical uneasiness, making a constant and

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excessive drain upon the nutritive processes, demands a much larger amount of nutritious food than is required in health. Yet from a loss of appetite, a weak condition of the digestive organs, or the influence of delusions, the patient is inclined to take too little food, or none at all, and, unless carefully watched, will soon fall into a state of prostration through starvation. The physician should, therefore, insist upon the patient's receiving—by force, if necessary—the requisite amount of nourishment, given in moderate quantities, at short intervals. Under this treatment it is often astonishing to see the rapidity with which the digestive organs will regain their tone, and the patient's physical and mental health improve.

Where the physical strength will permit, plenty of outdoor exercise should be taken, in the manner most agreeable to the patient.

When a condition of general debility and excessive mental and bodily prostration exists, great benefit is derived from Weir Mitchell's treatment, by absolute rest and massage, or muscular manipulation. Under this treatment the patient is put to bed for a period of from six weeks to three months, and required to remain absolutely quiet, while receiving all the nourishment possible to be assimilated. To prevent evil effects from quietude all the muscles are subjected to daily manipulation. The object sought by this plan is to reduce to the lowest degree the drain upon the nervous power, and at the same time stimulate the sluggish circulation, and restore the blood to its normal richness and purity. Under this treatment the depraved and vitiated blood is often soon enriched and purified, and, being sent by the revivified vessels to the starving tissues, supplies their long unregarded demands. The whole body, transformed and renewed in strength and vigor, reflects itself upon the mind, and the burden of depression is cast off.

Yet, assisted to the fullest extent by the adjuvants mentioned, sufficient field for medical skill remains. A large number of drugs, cited by the books as curative, have failed in the trial. We shall simply mention those which clinical experience has substantiated.

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ACONITE.—*Mind.*—Excessive mental restlessness and uneasiness, with great fear of approaching death, of darkness, and of being alone. Confusion of mind, weakness of memory, unsteadiness of ideas, with disinclination and inability for mental labor.

Head.—Intense general heat of head, with a sensation of fulness and severe pain in forehead, temples, eyes, and jaw, pressing from within outwards; aggravated by noise, stooping, and motions; relieved by rest. Dryness and burning of the eyes; anxious expression of face, which is red and swollen, or alternately red and pale. Mouth dry and parched.

Sleep.—Sleeplessness, or disturbed sleep.

Accompaniments.—Hypersensitiveness to noise, smells, light and air. Constant excessive thirst and loss of appetite. Dysuria, or frequent urination; urine hot and dark-colored. Oppression of chest, with difficult respiration. Hot skin, full and rapid pulse; often muscular pain and soreness, with general tired feeling.

This remedy is chiefly serviceable at the beginning of an attack where there is marked arterial excitement, attended by great mental uneasiness, anxiety, and fear of death.

The restlessness of Acon. simulates Ars., but the Acon. unrest is mental, stimulated by arterial excitement; while that of Ars. is physical, produced by excessive prostration and nervous irritation.

Great fear of death is also prominent in Calc. carb. and Lil. tig.; but the marked errors of assimilation in Calc., and the uterine and ovarian disorders of Lil., prevent any danger of their being confounded.

The majority of cases met are not sufficiently recent for this drug, yet, when indicated, it is often signally curative.

ARSENICUM.—*Mind.*—Great anxiety and restlessness, with excessive mental agony, producing a desire for death, and often causing suicidal attempts. Great fear of sudden death, ghosts, and thieves. Hallucinations of sight and hearing; hears voices, sees demons, rats, mice, bugs and worms, from which he attempts to escape by hiding. Indisposition and inability for mental or bodily work. Frequent attempts at self-mutilation.

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Head.—Great heaviness and weight, with a feeling of stupefaction in head, accompanied by humming in ears; better in the open air. Eyes sunken, face pale, yellow, cachectic, or covered with a cold sweat, and expressive of intense, long-continued mental suffering. Parched mouth, with dry red tongue.

Sleep.—Sleeplessness, or fitful, disturbed sleep; worse after midnight, with disinclination to remain in bed.

Accompaniments.—Violent thirst, with loss of appetite and disinclination to eat; burning pains in stomach and bowels, with inclination to vomit; black, acrid, putrid stools; burning at the anus like fire; micturition involuntary, suppressed, or scanty discharge, burning during emission; oppression of the chest, with difficult breathing and palpitation of the heart, especially when lying down at night; excessive restlessness, with quick, weak, irregular pulse, rapidly advancing emaciation, and general condition of exhaustion and prostration.

No other remedy is as often curative in melancholia with marked suicidal tendencies. It is especially indicated in cases of anæmia, much emaciated and greatly prostrated by the destructive processes, which have long been impoverishing the system. These patients are great physical sufferers, and their suicidal attempts arise from their desire for immediate relief.

Its restlessness somewhat resembles Rhus, but lacks its suspicion. The mental anguish simulates most closely Cham. and Nat. mur., but neither of these have the suicidal tendencies or an equal degree of emaciation and prostration. The Cham. patient is besides, more cross, fretful and irritable, and the Nat. mur. more given to floods of tears.

BELLADONNA.—*Mind.*—Great depression, anxiety, and anguish, with weeping, moaning, groaning, and fear of immediate death. Confusion of mind, with loss of memory; stupidity and loss of consciousness.

Head.—Intense jerking-digging pain, especially through the forehead and temples, with vertigo, pressure, great heat, and violent throbbing of all the cerebral vessels. Eyes congested, swollen, and protruded; pupils dilated; photophobia or insensibility to light; face extremely red and swollen; pains aggra-

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vated by stooping, noise, motion, mental exertions, moving the eyes, shocks, lying down, and open air; relieved by rest, pressure, and bending the head backward; dryness of nose, mouth, tongue, and throat, interfering with speech and deglutition.

Sleep.—Sleeplessness, or disturbed sleep, with frequent startings, as in affright; drowsiness, with inability to fall asleep.

Accompaniments.—Pulse full, quick, and much increased in force and frequency, with red skin and increased temperature; violent pressing and urging towards the sexual organs, worse on sitting bent and on walking, better on standing and sitting erect; menses too soon, profuse, bright red, or thick, dark-colored, and offensive; badly smelling uterine hæmorrhage.

Bell. is frequently demanded. In its increased temperature and arterial excitement it is slightly analogous to Acon. The Bell. congestion is cerebral and passive; the Acon. general and active. The Bell. patient is dull, stupid, and sluggish; the Acon. actively restless and uneasy. The Bell. patient buries his grief in his own brain and tries to conceal it from others; the Acon. pours it out upon those about him. Acon. avails only in recent cases; Bell. in recent and advanced stages of the disease.

Its mental dulness and stupor are also found in China, Dig., Op., and Verat. alb., but all lack the marked cerebral congestion. China, moreover, reveals in the weakened pulse and general exhaustion, its previous history of vital losses; Dig. presents its characteristic slow pulse; Op. has a greater degree of stupidity, with relaxed condition of the muscles of the face and peculiar stool; and Verat. alb. has its cold extremities, clammy skin, and irregular cardiac action.

BRYONIA.—*Mind.*—Great depression and anxiety, with fright, fear, and apprehension of future trouble and misfortune; irritability, weeping, and moroseness; mental exhaustion, and confusion of mind.

Head.—Severe pain in vertex and occiput, with dizziness, dull pressive pain in forehead and temples; also a characteristic sticking, jerking, throbbing headache from forehead backward to the occiput. All of the pains are worse from motion, exertion, and stooping; commencing in the morning, with the first move-

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ments of the head; relieved by rest, pressure, and closing the eyes; offensive bitter taste, with dry mouth, white-coated tongue, and great desire for large quantities of cold water.

Sleep.—Constant sleepiness, sleeplessness, or disturbed sleep.

Accompaniments.—Inclination to nausea and frequent vomiting; soreness in the hepatic region, with constipation from inactivity of the intestines; urine scanty and dark; great tendency to pleuritic and articular pains after any exposure to cold or dampness.

Bryonia is chiefly useful in cases with marked inactivity of the liver, and subject to inflammations of the fibrous tissues. Somewhat resembling Cimicifuga in its head symptoms and articular pains, it is distinguished by the marked aggravation from motion and amelioration by rest, with its excessive thirst and frequent nausea and vomiting.

The depression with apprehension, found also in Calc. carb. and Lil. tig., are attended by the scrofulous diathesis of Calc., and the uterine and ovarian derangements of Lilium.

CALCAREA CARBONICA.—*Mind.*—Great anxiety and apprehension of some misfortune or impending evil; irritability and peevishness; weakness of memory with dulness and confusion of mind.

Head.—Constant feeling of fulness in the head; pressure in forehead, extending down into nose; sticking pain in left side of head, relieved by closing the eyes; coldness in and on the head; ringing and roaring in ears; offensive smell in nose; white-coated tongue, with offensive or sour taste in mouth; face pale, eyes deepseated and surrounded by dark rings.

Sleep.—Sleepiness during the day, with difficulty of getting asleep at night; sleep disturbed by frightful dreams.

Accompaniments.—Ravenous hunger or loss of appetite; oppression of chest, with shortness of breath and palpitation on going up the slightest ascent; glandular swellings; menstruation too early; leucorrhœa like milk; great exhaustion, with cold hands and feet; nightsweats and sweat during the day, on the slightest exertion.

Especially indicated in women of leucophlegmatic tempera-

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ment and scrofulous diathesis, threatened with phthisis, or where the lungs are already diseased.

CHAMOMILLA.—*Mind.*—Depression and anxiety, with constant moaning, groaning, whining, and complaining, attended by excessive restlessness and uneasiness; cross, peevish, irritable, fault-finding disposition.

Head.—Great pressure, with severe pains, situated chiefly in the forehead and temples; redness of one cheek and paleness of the other, or yellow, bloated countenance; roaring in ears, with frequent hallucinations of hearing.

Sleep.—Sleeplessness or disturbed sleep.

Accompaniments.—Bitter, sour, putrid taste; pains in stomach, with eructations and tendency to nausea and vomiting; soreness in hepatic region; incarcerated flatulency and frequent, severe, colicky pains; dry cough, with dyspnœa and a sense of constriction in chest; tendency to metrorrhagia, and an acrid, yellow leucorrhea.

Although not ranking among the most commonly useful remedies, Cham. is still, in certain cases, very effectual. In the restlessness and crossness Cham. is analogous to Nux v., and, in its moaning and groaning, to Ign. and Nat. mur. The Nux patient is ugly, and liable to outbursts of violence; the Cham. is merely cross, peevish, and fretful. The Cham. patient moans and groans; the Nat. mur. patient pours out floods of tears, and is liable to marked hysterical paroxysms.

CIMICIFUGA.—*Mind.*—Miserable, dejected feeling; anxiety and general depression. Mind dull, with inability to fix the attention.

Head.—Constant dull pain in occiput, extending to the vertex; worse indoors; relieved in open air; pressing outward and upward, as if there were not room enough in the skull; aching pain in both eyeballs.

Sleep.—Sleeplessness, or restless, disturbed sleep.

Accompaniments.—Pain in cardiac region, with palpitation. Rheumatic pains in the muscles of the neck and back, and in lumbar and sacral regions. Pains in the toe-joints. Tremors all over, with general restlessness and uneasiness.

Beneficial in cases subject to severe rheumatic and neuralgic

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pains. Although not as efficacious as "the books" describe, and seldom curative alone, it is often of value in removing acute symptoms arising in the course of the disease.

CHINA.—*Mind.*—Low spirited, despondent, and tired of life, with suicidal tendencies. Fears and apprehensions, with inconsolable anguish and lamentations. Great sensitiveness, easily moved to tears by the least contradiction. Indifference and apathy, with obstinate taciturnity.

Head.—Severe pressing pains in different parts of the head, with sensitiveness of the scalp; aggravation in the open air; ringing and roaring in the ears; face sunken, pale, and pinched.

Sleep.—Sleeplessness, or disturbed, unnatural sleep.

Accompaniments.—Bitterness in the mouth. Appetite variable, or entirely gone, with imperfect digestion. Weakness and exhaustion after the least exertion, with excessive sensitiveness of all the nerves.

China is very often demanded when the depression is but a reflex of general lowered vitality. Depleted by sudden, excessive hæmorrhages, long-continued metrorrhagias, leucorrhœas, or seminal losses, the long-starved brain at last refuses to work. Continually burning, never renewed, the nervous fire of the central engine becomes exhausted, and fails to produce the necessary momentum for the general bodily machinery Under the influence of this drug the fire is rekindled, old clogs are removed, and the machinery again moves.

DIGITALIS.—*Mind.*—Anxiety, depression, and dread of the future, with sadness and weeping; worse about 6 P.M., and aggravated by music. Morose, irritable, and gloomy. Weakness of memory, with confused, dull, stupid, lethargic condition of mind.

Head.—Heavy and confused, with throbbing headache in forehead, or at bottom of the orbits. Pupils widely dilated and insensible. Red, yellow, green, black, and white colors before the eyes. Hissing and roaring in the ears. Face pale and sickly.

Sleep.—Sleep uneasy and unrefreshing; troubled by frequent awaking.

Accompaniments.—General appearance of weakness and exhaustion. Appetite poor; respiration irregular and difficult;

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pulse slow and weak, or slow and full, often intermitting, with sensation at times as if the heart stopped beating, accompanied by great anxiety, faintness, sinking at the stomach, and general coldness of the skin and extremities.

This drug, by numerous cures, has ranked itself among the first remedies in brain disease. The dull, lethargic, mental condition, closely resembles Bell. and Opium; the weakness and exhaustion might suggest China, or Verat. alb.; but, unlike any of its analogues, it invariably presents its characteristic slow pulse.

LILIUM TIGRINUM.—*Mind.*—Depression of spirits; constant inclination to weep, with fearfulness and apprehension of suffering from some terrible internal disease already seated. Fears of becoming insane; suicidal thoughts; disinclination to mental or bodily work, from inability to apply the mind steadily to any subject.

Head.—Intense pain in both eyes, extending backward into the head, with dimness of sight; shooting pains in right temple passing to left; intense blinding frontal headache from 5 to 7 P.M., then changing to occiput, and extending down neck, or pressing, frontal pain, with heat.

Sleep.—Sleeplessness, or restless sleep.

Accompaniments.—Increased sexual desire; great bearing-down in uterine region, with a sensation as if the whole pelvic contents would issue through the vagina, if not prevented by upward pressure of the hand on the vulva; severe pain in left ovary, running down; thin, brown, acrid leucorrhœa; constant pressure on rectum and bladder, causing frequent desire to go to stool; frequent urination, followed by smarting and burning in the urethra; sharp, sudden pain in left chest, with sensation as if the heart was grasped, interrupting the heart's action and respiration.

The frequent occurrence of melancholia, dependent upon uterine and ovarian disorders, renders this drug of the highest importance. Its clinical results have fully substantiated its provings. Its closest analogue is Sepia, but it lacks the general appearance of exhaustion and debility of that drug. Lilium is chiefly efficient in acute cases, markedly hysterical, where the lesions have not become permanently seated. With Lilium the

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digestive organs are much less involved, and it lacks also the profuse debilitating leucorrhœa which is constantly sapping the Sepia patient. Much more rapid in its action than Sepia, it frequently produces a most speedy and gratifying cure.

NATRUM MURIATICUM.—*Mind.*—Depression and apprehension, with constant excessive weeping without cause; great desire to be alone; indifference, absence of mind, loss of memory, and inability for mental labor; irritability and ill-humor.

Head.—Severe pressing-throbbing pain in forehead and eyeballs on awaking in morning, ceasing at noon, or continuing to gradually decrease until sunset, aggravated by stooping or sudden motion, with tendency to fall forward; redness of conjunctiva and lids, with lachrymation; burning pain in eyes, unsteadiness of vision, and inability to use them; blisters on tongue, mouth, and lips, with dryness.

Sleep.—Sleepiness, with frequent yawning; sleeplessness, or sleep disturbed by frightful dreams.

Accompaniments.—Bitter taste, or loss of taste for food; ravenous hunger or loss of appetite, with violent thirst; constipation; frequent micturition; intermission in the beating of heart and pulse; great emaciation, prostration, and exhaustion, with weakness and trembling of lower limbs.

Nat. mur. is indicated where the patient's grief finds constant outward expression in moans, groans, and floods of tears. It chiefly resembles Ign. and Puls., but lacks the numerous hysterical symptoms of the former and the mild, tearful gentleness of the latter. It shows also much more serious degenerations than either, manifested by the greater degree of physical emaciation, weakness, and prostration.

SEPIA.—*Mind.*—Sadness, worrying about her health and the future, with frequent attacks of weeping, worse in evening and in the open air; fits of involuntary laughter or weeping; dread of being alone; very irritable; indifference towards those she loves best; indisposition for mental work, with weak memory and difficulty in expressing her ideas.

Head.—Pain shooting from forehead to vertex and both sides of the face, drawing-tearing pains, sometimes stitches as of needles in right side of head; severe pains in left temple, or occa-

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sional darting pains from left eye over left side of head towards the occiput, worse in evening, better after meals; intense frontal headache, pressive pain in vertex; yellowness of whites of eyes; fiery sparks and black spots before the eyes; yellow spots on the face, and yellow saddle across the upper part of the nose and cheeks.

Sleep.—Restless sleep, disturbed by anxious dreams, awaking in a fright.

Accompaniments.—Weak, empty, gone feeling in stomach; frequent desire to urinate; urine thick, slimy, very offensive, with yellowish or red sediment; prolapsus uteri, with great bearing-down pains, as if all the pelvic contents would issue through the vulva; dull heavy pain in ovaries; profuse yellowish or white, acrid, very offensive leucorrhœa; tired pain in small of back, with great weakness, exhaustion, and prostration.

In melancholia reflected from deepseated diseases of the sexual organs Sepia is the great panacea. With constitution sapped from long-continued leucorrheal drains, the uterus unsupported by the weakened ligaments, and through malnutrition undergoing constantly increasing organic changes, these cases appear most hopeless and desperate. Yet Sepia, by slow, almost imperceptible steps, renews the impoverished blood, rebuilds the shattered constitution, and, ere long, with physical organs restored, mental health returns, and the patient again emerges into a land of sunshine and happiness.

VERATRUM ALBUM.—*Mind.*—Melancholia, with anxiety, as if she had committed an evil deed; sadness, despondency, and grief, with involuntary weeping and despair of salvation; fearful and apprehensive of misfortune; mind dull and stupid, with obstinate taciturnity.

Head.—Paroxysms of pain in various parts of the head; frontal headache, with nausea, vomiting and fever; pressive pain in top of head; cold spot on vertex; face pale, eyes fixed and sunken, with blue or green circles around them; nose cold and pointed; cold sweat on face and forehead.

Sleep.—Sleeplessness or disturbed sleep.

Accompaniments.—Great thirst for cold drinks; ravenous hunger, or loss of appetite; frequent inclination to nausea and vom-

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iting; constipation or exhaustive diarrhœa; excessive weakness and sudden sinking of strength, skin blue and cold; pulse frequent, small and weak, often intermittent, at times almost imperceptible; defective circulation, with general appearance of lowered vitality.

Veratrum is especially efficacious in the cases apparently most hopeless, where the patient sits in a stupid manner, with the head bent forward, taking no apparent notice of anything, answering in monosyllables or not at all, often taking no nourishment unless fed, skin cold and blue, pulse weak and intermitting. With the foregoing symptoms we have occasional fainting spells, with temporary unconsciousness and suspension of the heart's action. Under the influence of Veratrum the depressed vital powers are soon revived, and the patient advances to a complete recovery. After a seeming recovery the patient is liable to a relapse if the medicine is too soon discontinued, but when once the cure is fully accomplished it remains permanent.

Of course numerous other drugs, as Alumina, Argen. nit., Gels., Ign., Merc., and Puls., have, in certain cases, been found useful, still the largest majority of cures have been made by those mentioned. By constant study and daily experimentation we are trying to establish the true position of all our remedies in this field comparatively new to homœopathic therapeutics. Thus, with a daily increasing knowledge, substantiated by clinical results, we hope finally to obtain a homœopathic armament capable of successfully combating every form of brain disorder.

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XV.

GENERAL PARESIS.

By Selden H. Talcott, M.D., Middletown, N. Y.

The disease of which we propose briefly to write is a marked type of those grave forms of mental disturbance so common in our day, and which are the direct outgrowth of an unwise expenditure of nerve force through the various channels of overwork and dissipation. It is known under various names, the most common of which are: general paresis, general progressive paralysis, general paralysis of the insane, mania de grandeur, and dementia paralytica. The latter term might be more strictly applied to the last stage of the disease, while the former four are appropriate through all its stages. My object in presenting an outline of general paresis to this honorable body of physicians is twofold: first, to offer a description of the malady as concisely as possible, that the general practitioner may the more readily and clearly discern the affection in its incipiency; and, secondly, to excite discussion, draw forth experiences, and to devise, if possible, means for the relief of an hitherto incurable disease, or, what is better still, to develop plans for its prevention among the people.

What epilepsy and masturbatic insanity are among the young, what hysteria in all its protean forms is among females, that is general paresis among the robust but overworked or overdissipated men of early prime or middle age. I mean by this statement that it is a deepseated, far-reaching, intractable scourge, which fastens its malignant fangs upon the brains of its victims, and, unlike any of the serious diseases just mentioned, it never, according to history, yields up its hold.

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General paresis was first intelligently described by a French physician named Calmeil in the year 1826. It is, then, a disease known to the profession for only about half a century. Doubtless, however, it existed long previous to its recognition, but since that time it has steadily increased in frequency, particularly in this country, and is, indeed, a nervous plague peculiar to the rush and hurry of these modern, high-pressure times.

Paresis has been graphically and voluminously described in an uncertain and conjectural way by numerous writers, but these descriptions have mostly appeared in reports of asylums, or journals of insanity, hence have had but a comparatively limited circulation among physicians. More than this, these writings have but imperfectly or partially portrayed the malady under consideration.

Diagnosis.—Continued investigations have at last revealed certain conclusive and peculiar diagnostic symptoms, and to these we now invite attention.

In diagnosing paresis we shall endeavor to portray its varying phases after the fashion of that allegorical picture which leads us on through the undefinable ways of infancy and adolescence up to a towering prime, and down at last into the abruptly terminating valley of old age. We shall name the four stages of paresis as follows:

1st. Incipient or irritable stage.

2d. Well-defined, or stage of active delusions of grandeur.

3d. Stage of subsidence, or that of subacute or chronic mania.

4th. Stage of dementia, failure, and death.

The first stage is marked by unusual and undue irritability. This occurs to a decided degree, even though the patient has been hitherto quiet, good-natured, or jovial. He now seems preoccupied in his thoughts to an extent called abstraction, which condition often changes or alternates with one in which he is hurried, nervous, and fidgety. While in the former state, if spoken to suddenly, or roused from his abstraction, he will often indulge in an unnatural ebullition of anger, and will speak with unwonted harshness, even to a loved one, or when the person addressing him is making the most friendly or affectionate offer of assistance. If the patient is in a restless mood he will, per-

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haps, pass unheeded a friendly salutation, not from any disposition to be rude, but because in his mind he is eagerly pursuing some train of thought which precludes all consideration of the suggestions of others. Even at this early stage of paresis the patient is often observed to be most earnestly engaged in greater business projects than ever before, and will spread his financial canvas to its fullest capabilities, even though the threatening storm of another Black Friday is imminently impending. In this particular, under the influence of approaching disease, he distinguishes himself from the ordinary speculator or business man, who, though bold, will manifest at least ordinary prudence in the affairs of life.

At this juncture the paretic informs his friends that he is perfecting plans which will, in a short time, insure him an independent fortune. The work in hand occupies his mind day and night, so that he begins to lose interest in the social and domestic endearments of life. His sleep is greatly disturbed, and he often wakens at night, and is ready to spring into action at the earliest peep of dawn.

Again, the patient indulges in the most extravagant purchases, buying articles utterly unnecessary for his own comfort or that of his family; or if a single article is needed he may purchase a score or more of the same. An example within my knowledge was that of a farmer who went out and purchased fifty bulls with which to stock his farm, when a single specimen of that kind was all that the interests of the homestead demanded.

At first irritable, restless, and haggard, the patient soon assumes a tone and manner of extreme cheerfulness, and in the midst of his broadened business schemes, concocted during this abnormal excitement, he feels remarkably strong and well. If he stops to greet a neighbor, it is with more than usual warmth he tells you that he feels "first rate," and presses your hand with great ardor. Instead of carrying on a connected conversation, he abruptly tells you that he must send a telegram, or catch a train, or write a letter, or do something else of importance in a great hurry. He leaves so suddenly that you feel puzzled, by reason of the change in his customary manner. A few days or weeks later

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you learn that your friend has become insane, and then you recall with vividness the singular and brief interview.

In contradistinction to this exalted and energetic state, is one bordering upon melancholia, where the paretic patient is tremulously anxious over past or impending losses; fears he will starve, or his family come to want; or that his friends are robbing him; or that he is being cheated out of immense prospective fortunes. His mental horizon is crowded with dread and weird figures, the mingled products of vague fear and disordered sensation.

> "What doth ensue
> But moody and dull melancholy,
> (Kinsman to grim and comfortless despair,)
> And at her heels a huge infectious troop
> Of pale distemperatures and foes to life"

Gradually but surely the disease develops. An incubus settles down upon the mental processes, which the enervated will and impaired brain power are incapable of dislodging. Through the ill-defined mists of irritability and excitement or brooding melancholy come at last the sharp, clear symptoms of profound mental aberration.

Long suspected of "being queer," or "acting strangely," the patient finally indulges in a deplorable and sudden freak of violence, or makes some unparalleled rash move upon the chessboard of his business life, and then the friends are forced to checkmate him by calling in a physician.

Now is the time when that physician needs profoundest skill and keenest powers of observation. He will find, if he examines carefully the case to which he has been called,

1. The pupils either unequally dilated, or equally dilated, but irresponsive to light; or he may find them contracted almost to a pin's point and irresponsive to light. Irresponsiveness to light on the part of the pupils is characteristic in nearly all paretic cases.

2. The patient is unable to control in full the motion of the eye, owing to failure on the part of the motor oculi. There is a certain restlessness and unsteadiness in moving the eye, which to the careful observer is quite discernible.

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3. There is apt to be drooping of one corner of the mouth, owing to partial paralysis of the facial nerve.

4. A marked tremulousness of the lips and tongue while speaking is observable. This is one of the most prominent and easily perceived symptoms in the whole train that characterizes the disease.

5. A slight hesitancy in speech is apparent, as well as a deliberate attempt to overcome an inability to articulate distinctly.

6. Stammering in speech, especially when using those words which have K, L, M, N, R, and E in them. This is due to the fact that the hypoglossal is involved in the progressing paralysis.

7. There is slight unsteadiness of the gait, not so marked as that of locomotor ataxia, but still a sort of shambling, uncertain step, as if the knees were tired, and the walker could hardly determine which way to bend them.

These are some of the most important physical signs. Mentally, those already described become intensified. Visions of wealth, before which the marvels of Aladdin's lamp grow pale, and appear insignificant, are conjured up by the overwrought imagination of the excited patient. A sense of power the most magnificent also pervades his every thought. He is a maker of worlds; a creator of new planets; an artisan of whole systems; a builder of immense and marvellous structures; a projector of interminable railroads, located hundreds of feet in the air; a manufacturer and dealer in the fabrics of nations; and in every enterprise, according to his firm belief, there are "millions in it."

While the patient is busied with these lofty and mighty projects, his powers for considering the commoner things of life fall into disuse and decay. He forgets the most familiar names, even his own; fails to remember the most recent dates, and he also loses the power of calculating, even to the simplest problem in addition.

In a few cases the delusions of grandeur are absent, or undeveloped, so to speak. The victim simply presents the objective indications of the disease, or his delusions are those inspired by unwonted lechery, and he fancies himself the husband of numerous wives, whom he counts by the thousands; or, again, he con-

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soles himself with the fascinating pleasures of the cup, and projects himself into unusual and unreasonable dissipations. Occasionally a patient in this stage becomes a decided kleptomaniac, and picks up everything he can lay his hands upon, evidently impelled by the idea that they belong to him. He becomes also unusually sly and cunning.

From this stage of active delusion and active exertion the patient passes slowly but surely into what may be termed the chronic stage, which is marked by a steady exaggeration of all the physical indications, and a gradual subsidence of the delusions which have been cherished. The unsteadiness of gait is now pronounced, the tremulousness of lips and tongue and the hesitancy of speech become more strikingly apparent, the face loses its lines of intelligence and assumes a flat, flabby, expressionless contour, the patient grows careless of dress and person, and in manner, speech, and action there is a marked decadence of physical and mental powers. The appetite and thirst at this stage are often enormous, and an increase of flesh is frequently noticeable. This is, however, puffy and unstable, and the final result is a wasting away of all the tissues of the body.

The incipient stage of paresis may run on for several months before the disease is fully developed or recognized. The pronounced stage, often sudden in its inception, after a long and scarcely observed prodrome, is that in which the various delusions of grandeur come into full blossom and fruitage, and is usually limited to three or four months, sometimes to a few weeks even, and this is followed by the subacute or chronic stage, the length of which may vary from six months to two or more years. Pronounced paretics have been known to live six or seven years after the first invasion. During the chronic stage the delusions are gradually obliterated, owing to an inability of mind to conjure up any longer the golden Golcondas of wealth and power. The progress of the chronic stage is at last interrupted by an episode of epileptiform convulsions, at which time partial and temporary paralysis of one or both sides is apt to occur. After an attack of these convulsions the patient loses ground rapidly. The mind fails, and the condition of dementia supervenes. The appetite becomes variable and capricious, the physi-

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cal strength wanes, the body emaciates, the nerves atrophy, and the whole structure degenerates before the merciless invasions of this fell disorder. The skin, which has long been flabby, sticky, clammy, is now apt to break out in eruptions (Pemphigus foliaceus). At first these large water blebs are noticed on the extremities, afterwards there is superficial ulceration of the derma, followed by scabbing and attempts at healing. These sores heal but slowly, if at all. The patient grows gradually weaker, and is obliged to take to his bed. This enforced decubitus, at a time when general anæmia and atrophy have nearly completed their work, is followed by severe and intractable bedsores.* No amount of care seems to avail in warding off these distressing conditions. The patient will often cling to life for weeks after the thread that holds him seems eaten away to the last frail fibre. Nothing remains but to perform, for weary days and nights, the sad and hopeless task of removing debris from the stranded wreck; for at this juncture the sphincters become relaxed, and the contents of bowels and bladder are voided involuntarily. Yet the patient persists in living. It is one of the most remarkable features of this disease that the patient can continue to live long after all the forces of life appear to be exhausted, and when little remains but the skeleton overlaid by a parchment-like and very ragged skin. Of course we are now describing extreme cases, yet several of these have come under our observation during the past two years. Death comes at last through utter exhaustion. Sometimes for several hours previous to dissolution the patient becomes unconscious and thus passes away. But with the last articulate breath of life the dying man, corrugating his countenance into a ghastly smile, will reply to your inquiries as to how he feels to-day with the stock expression, "fuss rate."†

* Brown-Sequard's method of treating these bedsores (which is quite successful) is by application of alternate heat and cold. He applies pounded ice in a rubber bag for eight minutes. Then he substitutes flaxseed poultices for four hours, when he again uses the ice, followed by the poultice as before.

† Throughout the disease we find, as a rule, that the temperature of the paretic patient ranges from one-half degree to two degrees higher than normal, while the pulse, except in the maniacal stage, is usually not greatly accelerated.

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In concluding our description of general paresis we may state this singular but oft-observed fact, that throughout his disease, at irregular intervals, between his fitful visions of unearthly grandeur, the paretic patient sinks into the gloomy abyss of melancholia. There are days when he weeps easily and sends up a wail of anxiety and hopelessness which contrasts with his customary lofty and exuberant spirits as the mournful strains of the Dead March in Saul contrast with the sublimer sweeps and surges of the Hallelujah Chorus.

Typical Case.—We will now give a leaf from our asylum records, that you may see how naturally the actual facts in a given case consort with the pen-picture we have presented. The history we shall give will bring you face to face with grim and sad realities.

I. M. A., occupation, truck driver and huckster; admitted August 7th, 1877; age, 41; civil condition, married; children, none; education, common school; duration of present attack, about six months; form of attack, general paresis; cause, intemperance; prognosis, unfavorable from the outset.

The friends state that this patient has been "irritable" and "strange acting" for about six months; that he has been a hard drinker for a long time, and very arduous in the performance of marital duties; and that during the past two weeks he has been reckless, violent, and unmanageable. Soon after his admission he became noisy and almost uncontrollable, indulged in loud shouting, and threw bed and furniture about the room, broke the window to his room while attempting to drive a team through. At the same time he was eating but little, could scarcely walk, and his strength was fast waning. Accordingly he was confined to his bed in close apartments. August 8th. Left pupil about normal size, but not dilated; right contracted; pulse 124. Patient says he is "king of gods," made all people, and can raise all who have not been dead over fifty years; owns the whole world; his clothes are covered with diamonds; is telegraphing continually; declares that Queen Victoria, the Empress Elizabeth, and the Queen of Poets, are his wives, and that he made them. Patient is very forgetful of names. 9th. Patient says he was in heaven last night, and made a present of one hundred billions of dol-

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lars; wants two hundred and fifty millions spent in lining his room with gold; broke some dishes. 11th. Sleeps but little; has taken a prescription, Alcohol, 30 drops in two ounces of water, a spoonful every three hours. 12th. Pulse 84; left pupil more dilated than right; extremities cold; speech thick, words can scarcely be distinguished; puffing of cheeks; magnificent ideas continue. 13th. Pulse last night fell to 64, and patient was given Digitalis; in the morning pulse 76; whispering delirium; at times soils the bed. 14th. Is taking beef tea and wine; appears stronger and more rational. 15th. Pulse 100; still somewhat delirious. 16th. Great delusion; made two worlds last night; has innumerable wives and children; keeps eyes shut; pupils alike. 18th. Pulse 96; ate no breakfast; does not now wet or soil bed; delusions continue. 20th. Eats little; still has delusions of grandeur; diet, eggs and beef tea; medicine, Alcohol. 22d. Pulse 80; takes beef tea well, but no solid food. 24th. Right pupil contracted; left about normal. 25th. Is sleeping better, eats more solid food, and takes less beef tea. 26th. Pulse 84; says he feels "all right," but has some frontal headache; stays quietly in bed without restraint. September 1st. Feels well; mind is better, but still has delusions. 3d. Is gaining steadily; does not speak of his delusions; mind better than any time since admission. 4th. Pulse 96; right pupil contracted; slight recurrence of delusions. 9th. Now says his previous ideas of wealth were all visions, and at present feels poor; wants to see his wife; is quietly reading the papers; says he has been "hung," but is over that now; cries when addressed; marked tremulousness of chin, lips, and tongue. 12th. Right pupil contracted; lips tremulous; crying; wants to see his wife; has no delusions; talks sensibly, and knows he is in an asylum. 15th. Right pupil contracted, but somewhat dilatable, *i. e.*, responsive to light. 19th. Right pupil contracted, and now dilatable; has delusions again. 20th. Looks better; skin and eyes have natural expression; pupils respond to light. When the pupil is not dilatable the patient is worse; when pupil dilates it is a sure indication that he is better and more rational; is writing a note to his wife, and the letters are well-formed. 22d. Pulse 92; pupils more natural, but the right one is somewhat

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contracted; feels jolly, and is working on the ward. 26th. Is sulky, and complains about the food and the furniture in his room. 27th. Good-natured again; cries easily at times; emotions vary readily from grave to gay; physically is looking better. October 1st. Weight, 112 pounds; right pupil continues contracted. 13th. Says his eyes feel blurred after taking the medicine, which has been changed to Ignatia, on account of his tendency to weep and brood over imaginary troubles. 14th. Left arm felt numb for a short time; felt better, and then became numb, and "fell asleep," as he expressed it, a second time. 16th. Received a letter from his wife, and became much excited, crying considerably. 17th. Still crying, because he wants to go home; considers himself as ready as ever for business. From the middle to the last of October the patient gained steadily in health and spirits. He had no delusion, talked rationally, and the only abnormal symptom was a slight tremulousness of the lips and tongue when speaking. November 3d. He had a slight paralytic stroke on the right side, and, as he said, "felt himself sinking down." From this he rallied rapidly, and on the following day, November 4th, showed no effects from the seizure. At this time his left pupil was observed to be about normal in size, but oblong in shape, and not readily dilatable; the right remained contracted, but was somewhat dilatable.

November 15th, 1877, the patient was discharged, at the request of his friends. Although to the untrained observer he appeared quite well, the result of his case was entered upon our books as "improved," and his relatives, when pressing us for an opinion as to his future, were assured that he would, in all probability, suffer a relapse within six months, and that he could never fully recover. The sequel proved our prognosis correct.

April 10th, 1878, nearly five months from date of discharge, the patient was readmitted. It was stated that he had been quiet most of the time during his absence from the asylum, and had attended meetings and gatherings for amusement, but had worked at his business scarcely at all. His friends said he had generally appeared well, but not always exactly right. The night before he was returned he became violent, and attempted to kill his wife with a hatchet. He now has delusions that ene-

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mies are after him, and that he must fight them. No apparent ideas of grandeur, and has had none during his vacation. Face is white and drawn. April 11th. Pulse 120; temperature 97.8°; left pupil dilated; right, normal in size, but immovable; violent, thinks snakes and other animals are running over him during the night; knows he is back in the asylum, but cannot stay long; thinks his wife is after him with a butcher knife; weight 108 pounds. 12th. Pulse 84; feels better, has fewer delusions; is taking alcohol. 13th. Pulse 96; says that while home he had great pain in his head, like the nipping of crabs, which he claims was the effect of the brain medicine received when here before. 17th. Pulse 96; better; talks rationally for a short time, and then lapses. 24th. Pulse 92; headache at night, heat in the vertex after attack of depression, nervous vertigo, sensation of coldness and stiffness throughout brain. Prescription, Phos. 25th. Headache better. May 4th. Is restless and troubled only at night, during the day is very quiet; writes naturally. 14th. Has slept well of late; had to-day a short attack of dizziness, followed by ringing in the ears. 15th. Pulse 84; feels badly and depressed. 16th. Better and more cheerful. 20th. Pulse 76; better; no pain at night. 22d. While playing with his ward-mates was seized with a "spell," as he expressed it, and hurried to bed; found him stammering badly; throws his head back and shuts his eyes tight; pain on right side of the head; left hand feels numb, with anæsthesia of the surface. 24th. Patient has considerable rumbling in abdomen; says he feels better, but is really growing worse; is becoming more forgetful; does not know his own room.

June 4th. Is very wealthy again, with marvellous delusions; thinks he owns the asylum, and is going to stock it with millions of dollars worth of costly goods; has *seventy* immense and elegant stores filled with innumerable goods in New York city. 7th. In the evening began to stammer again in speaking; pain in back of head with nausea, and nervous shocks like electricity through the body; was given Verat. vir. 8th. Pulse 76, and stronger; patient still very sick, and in bed. 9th. Better physically; has delusions of extreme wealth. 10th and 11th. Delusions of wealth continue. 12th. Blisters and sores have appeared

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on the fingers. 13th. Is very liberal, giving away magnificent fortunes; promised his physician five millions of dollars if he would go to Paris with him. 19th. Less excited, and more moderate in his ideas. July 4th. The ulcers have healed, and the patient is mentally better; weight 106½ pounds; has now no delusions of wealth. 25th. Pain in forehead; feels ill, and looks duller than usual; no numbness in left hand, but the right is affected. August 9th. Has been very well for two weeks, with no delusions. 21st. Ophthalmoscopical examination revealed atrophy of both disks, but especially the left. 27th. Face is drawn; talks considerably to himself. September 9th. Is able to walk about the ward, but is weak, and talks with difficulty. 12th. Experienced a sudden attack of paralysis on left side; began to cry; soon became quiet and more rational, but still cherished some delusions of wealth. 14th. As usual, quiet but weak. 25th. Frontal headache not very severe.

During October nothing unusual occurred in the case. November 17th. Steals all the books he can find and locks them up in his bureau. 18th. Is found masturbating; has hitherto manifested no tendency in that direction. During the remainder of the year 1878 the patient developed no new or marked conditions or symptoms. 1879, January 16th. The patient thinks he has lost his wealth and is again depressed; has pain in frontal and parietal region, and occasionally along the course of the spine. 23d. Pulse 96; has a dull headache; scarcely answers a question. 25th. Brighter; has blebs and ulcers on toes. 28th. Pulse 80; very dull; head bent forward; no appetite; is fed beef tea. 30th. Is in bed; feels weak and dull. February 1st. Is up and dressed, but quite weak; feels sick and eats but little; depressed and anxious about his condition. 5th. In bed again; drank beef tea when compelled to do so, but has no appetite. 9th. Still abed; began to have fits about 11 A.M.; had eight in one hour; these were preceded by stuttering, and twitchings of the left side; these symptoms were followed by rolling of the eyes, grunting, and scratching the head (patient had an enema yesterday, and a proper movement of the bowels followed). Patient wets the bed. At 2.35 P.M. had a fit that lasted about ten minutes. Patient rallied from these epileptiform seizures, and on the 22d was

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better and stronger. 23d. Still better; hungry and eats well; recognizes people and answers questions. 24th. Pulse 96; has a good appetite; is stronger and gets out of bed continually. 25th. A little duller. 27th. Better; talks very well; is bright and cheerful, smiling whenever one speaks to him; has a bedsore which is scabbing over. March 1st. Says he is "all gone," but still maintains most of the time a cheerful spirit; has temporary spells of depression. Bedsores troublesome.

March 7th. Greatly emaciated; weighs 82 pounds; is doing well under the circumstances; back is healing; appetite good; spirits exuberant for an almost dead man. 9th. Had another fit; it was one of general and severe convulsions. 10th. Somewhat better; could talk and answer a few questions, but at times delirious, with delusions of wealth. 11th. Dull. 15th. Duller, and remains semi-stupid in bed. 21st. Pustules, size of split pea, on the inner side of left thigh, surrounded by a pink halo, —no other change. 27th. Pulse 92; is growing thinner; sleeps little; speaks little, but recognizes people. 28th. Weight 73½ pounds; about the same. 29th. Urine retained, and it was drawn with a catheter; patient fed with nasal tube. 30th. Pulse 88; patient dull, but talks a little; constipated, enema used, no result.

April 1st. Face pale and greatly sunken; patient does not speak; pulse 56 and weak; sleeps a little. 2d. Pulse 68; patient dull; cannot recognize or speak; had two severe convulsions this morning about eight. 3d. Pulse 68; patient in the morning was stupid, staring, comatose; cannot recognize or speak, but took beef tea; in the evening recognized those about him and spoke pleasantly with assurances of a "first rate" feeling on his part. 4th. Took beef tea for breakfast, and seemed about as usual. He died quietly, without groan or struggle, at 11.10 A.M. on that day.

A post-mortem examination was made at 10 A.M., April 5th. The body was found to be exceedingly emaciated; the scalp very thin, as also was the skull. On removing the skull-cap three ounces of serum escaped from the subdural space. The subarachnoid spaces were also filled with serum. The arachnoid membrane was decidedly opaque. The pia mater was adherent

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to the cortical substance of the brain, the result of long-continued inflammation. Weight of brain, 43¾ ounces.

This case presents the most salient points of paresis. The age, forty-one, the very prime of life; the condition, married, but having no children, consequently no bar or interruption to sexual excess; the apparent cause, intemperance; and the final result, death, after such marked improvement as to insure the patient's discharge for several months from the asylum; and through a period of nearly two years the persistent abnormality of the functions of articulation and the condition of the pupils, together with the rise and fall of delusions of grandeur and wealth, all these form an imposing array of important and interesting facts.

Causes.—Hyperstimulation of the brain and nervous system by various means, chiefly hard drinking, excessive sexual indulgence, and over application to absorbing and exciting business, may be said to most surely induce the disease in question. There are comparatively few cases where rum, women, or overwork, one or all, combined, do not figure largely as exciting causes. Occasionally a sunstroke, or a severe blow upon the head, received months or years before the attack, will come out so prominently in the history as to leave no room for doubt that these have played their part in the physical tragedy. Hereditary predisposition may also be looked upon as one of the causes of paresis; yet, so far as our experience goes, this supposition has but a slight basis of fact. Predisposition makes a very good general excuse for "ways that are dark" in paretic insanity. Most of the victims of general paralysis that we have met with or treated are from healthy stock, and not, so far as we have been able to discover, inclined to madness. Moreover, the pathological conditions are those of idiopathic disease, and not apparently due to inherent weakness of the brain tissues.

In tracing the causes and courses of this disease some very interesting facts crop out. 1st. In the matter of sex, males largely predominate. The nineteen cases treated at the hŏmœopathic asylum were *all* males. In England male paretics predominate over female as five to one. In this country the difference in favor of females is still greater, there being probably ten male paretics

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to one female paretic in the United States. This is accounted for from the fact that women are less exposed to business anxieties, and temptations of intemperance or indulgence. 2d. It has been noticed, as a most striking fact, that the wives of paretics are usually very robust, and, according to outward appearances, voluptuously inclined. 3d. Paretics are not prolific. Of nineteen cases that have come under our observation thirteen have been married; and to these were born but thirty children, a trifle over two apiece. When we consider the robust physical condition, previous to attack of the paretic, and the strong, well-developed physique of their wives as a rule, we are forced to the conviction that this lack of progeny is owing to a want of true vitality on the part of the reproductive organs, which very likely results from early excesses, whereby the virile power of the patient becomes exhausted and barren of all vitalizing principle. While a large proportion of paretics have been married, we may state of the unmarried ones, that they have in most instances been strongly addicted to association with impure women, and consequently are often found to be afflicted with syphilis, or the remnants of other venereal disorders. 4th. Paretics are generally not much addicted to masturbation; they seem to prefer gratifying their sexual desires by coition with rugged and magnetic members of the opposite sex. On the other hand, those given to the vice of self-abuse in early life quite surely become the victims of protracted dementia. 5th. While the majority of paretics do not spring from the higher or better educated classes, we find that most of them have been men of quick, sharp, mental faculties, possessing much of the energy and push of Americans, combined with a jovial and reckless disposition. With strong bodies, and active, even though uncultivated, brains, these men seize, with consuming avidity, upon the hard work or the sinful pleasures of the world. That they break down in the middle prime of life is due simply and solely to the consumption or wasting of both principal and interest of their nerve capital.

Pathology.—The pathology of general paresis was long shrouded in obscurity. To the casual observer the paretic brain, under post-mortem examination, presents but little that will satisfac-

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torily account for the terrible mental tornadoes that have prevailed, or for the unerring fatality of the disease in question.

There exists, during the progress of paresis, a slow but continuous inflammation of the cortical substance of the brain, together with the meninges. Calmeil, who first described the disease, pronounced it "diffuse periencephalitis." He also named it "general cortical cerebritis." Meyer gave it the name of "chronic meningitis." Bayle styled it "chronic arachnitis." Erlenmeyer pronounced it "cerebral atrophy;" and Westphal, "chronic myelitis," from the belief which he entertained that the spinal cord was a primary seat of trouble. The terms used by these writers express but a portion of the actual disease. We have, therefore, selected the expression, "meningo-periencephalitis with atrophy," as the one which most completely covers the whole pathological condition. The pia mater is always found adhered to the brain surfaces in spots (upon the upper parts of the convolutions, never in the sulci), and, when peeled off, takes with it small portions of the cortical substance. These adhesions are found upon the anterior and middle lobes. The brain always atrophies under the influence of paresis, and the tissues become more or less sclerotic. Effusion, to a moderate degree, usually occurs; so it does in senile dementia, but in the latter case is a process of years' duration and a result of old age, while the atrophy and effusion of paresis may occur in a few months and in the prime of life. Inflammation of the arteries exists to a considerable extent, and occasionally atheromatous deposits are found. The dura mater is often thickened, sometimes to the extent of half an inch, and is somewhat discolored, darker than usual. In one instance, at the homœopathic asylum, a tumor in the base of the brain, fibrous in its nature, and pressing upon the optic commissure, causing complete atrophy of the right optic nerve, and consequent loss of sight in the right eye, was discovered. There is usually a general œdema of all the membranes of the brain, with more or less opacity of the arachnoid.

In addition to the pathological conditions of the brain there is found a decided atrophy of the great sciatic nerve, which may account for the gradual loss of power in the limbs; the tottering, uncertain, and shuffling gait.

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This atrophy of nerve-tissue, which apparently begins in the great nerve centres, steadily proceeds to involve the entire nervous system.

Closely associated with a manifest weakness in walking is a marked tremulousness of the lips and tongue, hesitancy and thickness of speech, and a flat, masked appearance of the face, all of which latter are due to wasting away and loss of power of the facial, trifacial, and glossopharyngeal nerves. We suspect that the great sympathetic is always involved, but this is not yet thoroughly demonstrated. We do know that the nutritive filaments are given off from the sympathetic to the trifacial and glossopharyngeal, and that these nerves are seriously affected by the disease.

Prognosis.—The prognosis of paresis, according to numerous writers and our own experience, is always unfavorable. The patient often appears to mend, and will, in fact, go for months with very few of the outward signs of the disease; but, sooner or later the storm, which has experienced a temporary lull, will rise again and move on with resistless fury. I believe that no well-authenticated case, where it has been fully developed, and where no doubt could exist as to the diagnosis, has been placed upon record as fully recovered and has remained so for five successive years. Will it always be so? is the anxious question of every one who seeks to battle against this grim destroyer of robust manhood.

Treatment.—The treatment of paresis should be both hygienic and medical. While we cannot with confidence anticipate recovery or hope for a cure we may at least prolong and render endurable an otherwise wretched life; and possibly we may succeed in restoring the victim for a few months to his friends, which is in itself a worthy and commendable work. More than this, we may yet, if persistent, make discoveries in remedial medicine which shall open up a new Columbia to the hurried and oppressed struggler against such an untimely fate as that now decreed to the general paretic.

We have sought diligently for a "similimum" that would cover the "totality of symptoms" in such cases as we have pictured, but, like the searchings of the brave Ponce de Leon for the

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fountain of eternal youth, our searchings in this direction have resulted only in the vanity of disappointment. Each case of paresis, like every other case of disease, has, of course, its own individuality, yet there is indeed, in all cases, a remarkable uniformity of both objective and subjective symptoms. Hence a single remedy, if we could but find the right one, or at least a small group of drugs, might with proper homœopathicity cover these cases; just as the immortal Hahnemann found Belladonna the specific for a certain type of scarlet fever. In our studies and experiments we have found *Alcohol*, pure and simple, the most thoroughly indicated according to the symptoms, and most decidedly efficacious in effecting relief when practically administered. A weak and tottering gait, limp and uncertain movements of the entire body, tremulousness of lips and tongue, thickness and hesitancy of speech, an uncertain expression of the eyes, together with transcendent notions of wealth and power, are all characteristic of the paretic patient, and find their most perfect counterpart in the actions, words, and thoughts of him who makes a "proving" of the alcoholic sops of Bacchus.

Under the action of small but appreciable doses of Alcohol several of our patients have experienced a marked temporary amelioration of their symptoms, but the medicine has not charmed away the malady, nor hindered, for any great length of time, its onward march.

Again, we have used Cannabis indica, as our patients have manifested the strange vagaries, or experienced the marvellous visions of the hasheesh eater; we have tried Coca when the *sense of strength* has outstripped the actual physical powers; we have administered, in varying potencies, Actea racemosa, Arsenicum, Belladonna, Cuprum met., Hyoscyamus, Ignatia, Nux vomica, Phosphorus, Digitalis, Calc. phos., Phosphide of zinc, Conium, Anacardium, Stramonium, Sulphur, Veratrum alb., and Veratrum viride, when any of these were called for by proper indications. While our remedies have apparently produced beneficial results yet the El Dorado of our hopes,—the perfection of a cure,—remains unreached. The treatment of paresis by homœopathic medication has been too brief and imperfect to be either discouraging, conclusive or satisfactory.

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The Gatling gun of homœopathy has brought down many a refractory foe in the days gone by; why may it not yet, in time, draw a sure "bead" upon *this* pathological Attila?

Hygienically the paretic needs the most scrupulous and kindly care. During the stage of excitement he should be watched over and handled with all the caution attendant upon the nursing of a patient suffering with acute mania. After passing into the chronic stage his strength and physical health may be long preserved by regular and abundant out-of-door exercise. By placing the patient at work he is relieved of his overcharge of activity without feeling the chafings of close confinement. The air and sunlight contribute to his happiness and well-being; the labors of the day divert his thoughts at the time, and promote his tendency to sleep at night. His appetite is kept up, and his powers of digestion remain longer unimpaired while at work than when loafing in idleness. At Hanwell, in England, a considerable number of paretics have been kept in very fair physical condition for years through the special means of systematic and abundant out-of-door employment. These labors of the paretic can only be begun after the excitable stage is past, as during that period his attention can hardly be attracted to anything of an ordinary worldly or menial nature. Work should, of course, be imposed only when the patient is sufficiently strong to endure it, and it should be continued only so long as it evidently produces beneficial results. In his labors the paretic should be protected from the hot sun, as this almost always brings a return of the unnatural excitement.

Prevention.—Now what shall be done to save men from the inceptions and invasions of this fatal scourge? For fifty years the work of cure has been attempted by faithful, earnest, and learned men, yet with what an array of disastrous results! While we record with pride a series of triumphs against the ordinary foes of life, we stand aghast before the inroads of this dread vampire, and see strong men falling by its insidious encroachments like the tender plant before the hidden worm at its heart, yet we are powerless to help. Would it not be wise, under circumstances like these, to apply the check-rein of prevention

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rather than to engage in the almost hopeless task of patching up or seeking to save the shattered fragments of a runaway wreck?

The causes of paresis have been pointed out, prominent among which figure alcoholic stimulants and sexual excesses. When the people, through their physicians, are brought to realize and know the fatality of their own self-imposed diseases, may they not be induced to refrain from those formidable dissipations whose feet take hold on destruction, whose bite is like that of an adder, and whose final result is a hopeless chamber and death-bed within the walls of an insane asylum?

The cares and afflictions of ordinary life, the unpreventable reverses of fortune, the afflictions of disease due to ordinary occupation or climatic influences, the hereditary weaknesses which come down to us from our ancestors, all bring to institutions for the insane their quota of suffering victims. But many of these may be stimulated by the hope of restoration and may return in due time, with renewed health, to a life of usefulness. But for him who progresses to paresis through the by and devious ways of his own dissipations, there are no more cheering words than those engraved upon the portals of Dante's Inferno: "Who enters here leaves hope behind."

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XVI.

A CASE OF HYSTERICAL DELUSION.

By N. A. Pennoyer, M.D., Kenosha, Wis.

Mrs. A. C., aged thirty-five years, came as a house patient August 26th, 1872, and presented the following symptoms: She had been married fifteen months, and was first taken eight months ago, with sickness at the stomach after drinking coffee. She had cold sweat on head and hot flashes; was despondent about her health, and had fears that some one was going to poison or murder her; was afraid of her husband, and thought when first attacked that he had poisoned her coffee; has dizziness in top of head; much pain in back of head, and pain all through face; worse in morning; head feels heavy, and has loss of memory; tongue coated yellowish, and has bad taste at night; much thirst; an indescribable bad feeling in the stomach; chills, commencing in pit of stomach; bowels irregular, loose and constipated by turns, stools containing ingesta; menses regular, proper quantity, and continue three days; pain in back, abdomen, and limbs at time of flow; leucorrhœa profuse, milky, has been yellowish, worse before menses; griping pain in either groin; bearing down pains, worse before menses; great pain during coitus, like a knife, also pain in head during coitus and cold feelings; cannot bear weight of clothes on abdomen, or bedclothes at night; pain through the hips; has burning sensation in lungs; pains in limbs and feet, with hot flashes over her; perspiration on head, neck, and chest; pain in chest when taking long breath; shortness of breath; pulse, 66; nervous spells, attended by cold hands and feet and frequent urination; hysterical bolus;

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sleep disturbed; jumps out of bed perfectly wild; as soon as she goes to sleep she starts as if frightened; always feels worse when she wakes.

Lachesis$^{\infty}$ was given, four doses daily. Improvement was marked, so that in three weeks she said she felt well and wished to return home. To insure permanent relief she was advised to remain longer, but continued under our supervision only three weeks more. The case was a simple one; the patient, if I remember rightly, had been a teacher previous to her marriage, and doubtless there was some hyperæsthesia or vaginismus at the time of her marriage. This was aggravated in her new relation and the nervous and mental conditions above enumerated were obtained. The general symptoms, independent of the mental condition, were sufficient to indicate the remedy, and the case may be instructive only as adding one more witness to the importance of considering the relation between mental symptoms and disturbances of the sexual organs.

We have often observed such disturbances in cases when the symptoms were very obscure, or entirely covered by the intensity of the nervous symptoms. An atonic condition of these organs may obtain under these circumstances, which may be overlooked and which comes to the surface when the intensity of the nervous or mental symptoms subsides.

The fact that a healthy condition of the mind depends largely upon a perfect functional state of all parts of the nervous system, should lead us in physical disturbances to look carefully for the remote causes or concomitant symptoms of disease.

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XVII.

PSYCHOLOGICAL MANIFESTATIONS OF PHYSIOLOGICAL DISEASE.

By George W. Moore, M.D., Springfield, Ohio.

While it is well understood that under certain circumstances the mind has a wonderful influence over the physical body, still we take the ground that the mind is entirely incapable of being diseased, and that our so-called mental symptoms are simply the psychological manifestations of a physiological disease, and can properly be used only as a means of diagonsing such disease.

Psychology refers to the soul or mind, or to that part of man which is capable of invading all space, and of being everywhere present. It is as imponderable and as incomprehensible as light, heat, or electricity, and it is as necessary to have a healthy and perfect organism for its development and operation as for the telegraph operator to have his battery in perfect order before he can control the electricity.

Very little was known or written upon the subject of insanity for the first three thousand years in the history of the world.

Among the first records we have of any one becoming insane is the feigned madness of Saul and David; also of Ulysses, one of the illustrious generals of the Trojan war, who, it is said, actually got up excitement enough in the cells of his brain, after capture by his enemies, to produce temporary insanity. A few years later we read of another case, Nebuchadnezzar, a Babylonian king, who was probably attacked with that peculiar form

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of insanity, called lycanthropy, as it is said he imagined himself a beast and roamed over those ancient hills, eating grass like an ox, for a period of seven years.

Insanity may manifest itself in many different ways and present a great variety of symptoms, from a pseudo-mania to an incurable dementia, developed through a general course of degeneracy, each presenting its characteristic symptoms, according to the peculiar brain-cells or nerve centres affected.

Although we may have the so-called moral symptoms in the provings of most of our drugs, it is evident that they are produced by the action of the drug upon matter, and not upon the mind. Consequently, to effect a cure we must expect to treat diseased matter, and not diseased mind, and the entire separation of the different classes of nervous diseases has been naught but a sad hindrance to progress. For instance, when a blow on the head has paralyzed sensibility and movement, in consequence of the disease in the brain it has excited, the patient is sent to a hospital; but when a blow on the head has caused mental derangement, in consequence of the disease in the brain it has produced, the patient is sent to an asylum. The same cause produces different symptoms, according to the part of the brain which it particularly affects.

In regard to the treatment of this class of disorders, I must confess that in my experience the symptomological theory has proved a failure; for, they invariably depend upon some functional or pathological condition of the brain, or nerve-centres, and consequently must be treated from a physiological standpoint. The "totality of the symptoms" theory in certain cases is an impossibility, and the "keynote" theory not entirely reliable. To illustrate: we often find a patient in a fitful mood, changing from one thing to another; now mirthful and singing, now moody and disposed to weep; fear of death, with great anxiety and even delirium. We recognize some of the symptoms recorded in the provings of Aconite nap., and having full confidence in the law of similars, we administer Aconite to this patient and she is cured. But now let us reason from cause to effect, and see how our patient was cured. We find that although the psychical condition would lead us to believe that her disease was purely mental, we find that it actually consisted in,

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and was the result of, a hyperæmia of the brain, mechanically interfering with the natural functions of the mind; and as Aconite is an arterial and nerve sedative, it slows down the heart's action, reduces the volume of blood flowing to the brain, the hyperæmia is relieved, the physical condition of the brain becomes normal, and the psychological symptoms disappear.

Again we recognize some of the recorded symptoms in the provings of Nux vomica in the following: Anxiety, followed by hurried breathing, accompanied by nausea, apprehension of approaching death, violent palpitation of the heart, the head feels dizzy and intoxicated, delirium, frightful visions; vertigo, with obscuration of sight and whizzing in the ears; vertigo, with staggering in walking, etc. Now, it is evident that this condition is produced by hyperæmia or congested condition of the sensorium or nerve centres, and as the primary action of Nux vomica is upon the sensorium or nerve centres it would seem to be the proper remedy, according to our law of cure. But if Nux vomica acts upon the sensorium, or nerves of special sense, and is capable of producing the eight hundred symptoms recorded in our *Materia Medica*, could we not, with all propriety, suppose that under similar circumstances it is capable of producing a thousand different symptoms, or, in fact, as many as one could possibly imagine? And the idea that we can or ought to try to observe the totality of the symptoms of all cases, whether produced by disease or drug force, is as impracticable as the key-note theory; but if we will bear in mind that every organism is composed of many organs, and that each of these organs has its natural functions to perform, that each one is subject to disease, and when diseased, its natural functions being interfered with the condition becomes pathological, then we shall not be surprised at the innumerable symptoms that may be developed from some of these organs as the result of this pathological condition. I would therefore recommend, with all due respect to Hahnemann and his host of followers, who have labored so faithfully for the development of our law, that hereafter, when engaged in proving a drug, they simply give us its sphere of action, and allow the physician to draw upon his imagination for anything that he may need in the way of symptoms.

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XVIII.

THE PHYSICAL RELATION OF MENTAL DISEASE.

By T. L. Brown, M.D., Binghamton, N. Y.

Forms of matter and motions of the same constitute the method as well as the basis of normal or morbid mental action. A perception, or its revival in the effort of reflection, we count as two distinct but similar brain-motions. A molecular tremor, a nerve wave, is wholly dependent upon former and present forms of brain and other nerve matter. Without the outside forms we could not have either brain matter or its internal motions. When the subjective reflections and reasonings fully and correctly correspond to the objective perceptions then do we claim the subject sane. His actions and expressions will bear the tests of scientific investigation and ages of experience.

Sane ideations are but correctly classified perceptions, often and easily recalled; motions of the brain substance resembling the returning waves from the opposite shore of a lake, similar, but not the same.

To repeat a perception or an idea is impossible; it would be only another and similar motion of the brain substance. When we change the composition of brain substance, or the conditions of the blood and nervous system, we modify perception, ideation, and the final sanity or insanity of the subject. Healthy thought is fully distinctive and demonstrable, and is the just measure of sanity. By the closest attention and comparison we reach our highest correct thought and most useful state of mind. Can we have a thought independent of matter and motion? Could there be a thought without substance? Could there be a motion

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without something to move? Signs, sounds, and all kinds of sensations are compared, and our education is in a like manner increased. The physical and mental are inseparable, like matter and motion. Break up the continuity of brain substance, and its manifestations of thought will become discordant and unreasonable.

Before the mind can be perturbed and crazed the former combinations of the brain form must be changed through imperfect alimentation and nutrition. A uniform supply of brain material, in a strictly physiological process, will prevent the physical changes invariably preceding mental disease.

What do we know of mental disease except by faithful comparison of acts and expressions with the bodily conditions, first the morbid physical, then the morbid mental? Food, exercise, sleep, rest, drugs, stimulants and social relations, modify the organic structure of the body and control the manifestations of mental disease. Healthy bodies and good souls are symmetrical inseparables, like matter and motion. Disorganized and unhealthy bodies and bad souls are alike constant companions in misery, discord, insanity, and deformity. The insane demand, claim, and assert without reason or evidence, while the sane demonstrate, illustrate, and are more patient, less egotistical and selfish. The sane have clearer thoughts of the real and substantial, and are not floating on high clouds of dreamy speculations and mongrel imaginings; they avoid fanciful extremes. They remain near the earth in close observation of forms and motions, correctly recording the facts, out of the reach of individual or national public charities. They are rational leaders, not fanatical pounders of the far-off myths of idiotic guesswork. They mentally deal with the near forms of creation, in development of the health-useful, the true educational, and the correct thought-producing. The possible, with a rational smile, accompanied by harmonious action and words of unmistakable meaning, distinguished from the impossible under a cloud of mystery, tyranny and curses, amounts to a fair contrast of sanity and insanity, both the result of two entirely opposite physical conditions,—one the true, the other the false; one liberal, just and harmonious, the other destructive and tyrannical. Sanity is mental truth,

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adding to its stock of knowledge new perceptions and better thoughts of the present forms and motions. Insanity is, in a degree, the opposite, as near as we in our present state of mind can compare. New as well as old forms more fully understood as created and destroyed is the best evidence of psychological advance and physiological perfection. Physicians, more than other men, should know best how to build a brain and correctly distinguish between its normal and its morbid phenomena.

Our soul, like our voice, is but a motion of forms of organized material. Our present thought, the soul of this moment, our consciousness, our present sensation, is only one of the many brain motions of our whole individual soul. A soul is faithfully saved in and by the real forms and motions of matter, and lost by failing to cognize the forms and uses of the material world.

Thought is a motion between two forms, fathered by a physically produced perception, mothered by a physical retention, and perpetuated by continued organized physical forms similar in structure. Similar forms continually perpetuate similar motions and phenomena in or out of the human brain when existing under similar relations.

To imitate is to annihilate self; but to do the like of which has never been done before, is material and mental advance. To say we love the unknown is an illustration of insanity, a fair manifestation of a want of intellect. To the mind all the unknown has no form, no real physical and, therefore, no truly mental relation.

How can there be a mental action independent and separate from a form of matter? We could as easily think of motion without something to move.

Sensation is the motion of brain-matter while in a normal or morbid state. Consciousness is the sense-motion of the brain. The absence of sensation-motions amounts to unconsciousness. Beyond the domain of forms and combinations of material we find no food for ideation or thought, no room for sanity, no mind manifestation, no genius or mental science. When have we been able to separate the physical from the mental? What we call force or power we have no thought of except as a motion of a form. Do not the forms and motions of matter constitute the

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foundation of all thoughts? Object and subject are inseparable, like feeling and reflection. To the most perfect form and combination of the physical we turn for the correct mental; with the diseased physical we look for the morbid mental. Matter, the producer of the mental; the mental, the reproducer or destroyer of only certain forms and uses of matter.

In the brain nerve-cell form and motion is the type of mind. The white and gray nerve-cells, when most perfectly organized into brain form, constitute the physical structures which precede human mentality.

As there is a limit to the attenuation of the forms of substance of which we are composed, nothing smaller than the smallest, we conclude the smallest atom of matter has still a form and motion. We conclude a thought-motion can exist in the smallest nerve-cell of the brain, perhaps several thoughts in one cell. We reason that the similar thought-motion is transferred to the next new similar nerve-cell, which takes the place of the former one; that each cell has a life and death; that a large brain can hold more cells and thought-motions than a smaller one.

In proportion as the brain nerve-cells lose their form and thought-motion, the individual manifests his loss of sanity and his co-ordination of physical and mental health. In the proper use of the physical forms we find the cure for mental disease. In the primary forms and motions of matter, such as gases, light, and heat, we find the origin of human existence, both physical and mental. Body and mind, brain and thought, are only matter and motion.

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APPENDIX.

DISCUSSION.

FIRST DAY—EVENING SESSION.

DR. PRICE: *Mr. President and Gentlemen:* I was called some three years ago to a case which had been under allopathic treatment for several months. When I saw the patient he was entirely paralyzed. The lower limbs were drawn up. He was lifted up from his legs, and could not bear the weight of his body on them at all. He also was perfectly paralyzed in his hands, and could not feed himself. He imagined that he had twelve hundred horses at the depot which should be attended to, and that he had several carloads of cattle, and must go over to the depot immediately to see after them. At that time I had never seen such a case. I had seen very little literature on the matter, but have since studied up the subject carefully. I told his wife that so far as I could learn no such patients had ever gotten well. Some improved, but were sure to relapse. The duration of the disease appeared to be about three years. She wished to call in another physician, as he had been under allopathic treatment. I told her if she wanted to consult anybody else she could do so. The understanding was that I was not to go back again. They sent for my old friend, Dr. F. R. McManus, who, learning that I had charge of the case, refused to see it, except he saw it in consultation with me. I then had the patient on Plumbum, the 30th centesimal. The doctor advised me not to give the patient up, and said he would get well under my treatment, as well as under the treatment of anybody else, and he said also, "If I were in your place, I would hold on to it." I told the family the doctor wished me to treat the case, but being very busy, I turned it over to my son. He studied the case up, and put him on Zincum metallicum. After awhile there was a great improvement. The patient got about on crutches, and walked with a cane, and a week ago walked up to our office without either. I have seen his family since. His gait is yet a

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little unsteady, and he is not able to work. To refer to his prior history, he was a tinner by trade, and had done a great deal of work; had done a great deal of tin roofing. To corroborate Dr. Talcott's paper, I will state that he had become rather intemperate. They had a large family, some six or seven children. I suppose the gentleman is as well as he ever will be. The case never had a relapse, but went on steadily improving from week to week.

DR. S. LILIENTHAL: In the beautiful paper which Dr. Talcott read I find that he predicted a stage which is found in different diseases. That stage is the one which we find in so many cases of the disease of the cerebral-spinal nerves. A great many subjects complained of what are called rheumatic pains, rheumatoid pains, which are neither rheumatism nor neurological, because they show commonly a sudden twitching, as it were, which will lead us right off when we look at them, as they have no bearing on the case. This shows us that from the beginning this disease is of a central origin. Persons affected in this way are very liable to catch cold.

The second symptom, to which our attention is directed, is in persons who have never suffered from headache, in whose family relation no such history is given. Likewise, we do have pains shooting over the head, either from behind forwards, or vice versa, which is more frequent, and likewise the electric symptom. Another symptom to which we have had our attention drawn, and this has been often the case, is that they often become insane before that inflammation sets in. They have eccentric habits, and an irritability of temper. Another expression, or phase, such as Dr. Talcott remarks, is, as you may say, a statue-like fixedness, a drawn sensation in all the muscles of the face. Now, if we look at dementia paralytica, which, on the contrary, is perfectly curable, we will find a similar state of affairs. This is a disease which may be cured in its first stage; but, in its first stage, it is a disease which is commonly mistaken, and very little treated. If we pay our attention to it right off, something may be done. When we find these shooting pains in the muscles, such as Dr. Talcott has described, we will find that it comes from behind. It comes from the spinal column. If we look at these symptoms at the very beginning, and treat them, especially keeping the patients from all mental effort, give them rest *mentally*, and send them into the country, not only for a week or a month, but for a year, they will have a chance to recover; but if they are not sent away, they will go from bad to worse.

DR. BREYFOGLE: It certainly affords me great pleasure to have an opportunity of addressing the Institute and of expressing

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my mind in regard to the efficacy of treatment, as to Dr. Talcott and Dr. Butler in their institution. I had, to my mind, a peculiar case which exhausted all ordinary resources. A lady of high social standing had become addicted to the use of morphine and alcoholic stimulants to such an extent as to render her most miserable. I had, as I remarked before, exhausted all my resources, and as a dernier ressort sent her to Dr. Talcott for treatment. I am glad to say that in four months' time she was returned permanently cured of all desire for stimulants,—another evidence in support of the remark that absolute rest is necessary. In this connection, and pertinent to the discussion, I wish to call attention to a remedy which I have not heard mentioned in either Dr. Butler's or Dr. Talcott's papers, one which has served me on several occasions where habits were formed of using opium and stimulants. The case I have in my mind was exceedingly aggravated. A very celebrated literary character, who, from overwork, had become addicted to the use of morphine and chloral to such an extent as to take an ounce and a half of chloral and eight ounces of water during the day, and also four grains of morphine daily. When she came under my treatment I found her in convulsions, and emaciated to such a degree as certainly to be the most pitiful object I ever saw or that I was ever called upon to treat. I recognized some of the nervous symptoms as covered by Moschus, and I determined to give it. Not being able to procure the commercial tincture, I made my own preparation. I had it ground and gave it in five-grain doses. In ten days' time I was enabled to withdraw the medicine. Although that was four years ago my patient is now perfectly well, and is here to-day in the capacity of a correspondent writing up our convention. I think it a very valuable remedy.

DR. PRICE: One persistent symptom is pain in the knee and below the knee.

DR. HALL: I was very sorry that Dr. Talcott could not complete the treatment in his case. I glanced over his paper after it was placed upon the table, and find he mentions Alcohol as one of his principal remedies.

Now this may shock the feelings of some of our members that we should give Alcohol in these cases; but I affirm the opinion of Dr. Talcott in regard to his treatment. I believe that Alcohol is one of the best medicines in such conditions. Dr. Talcott also, in his prognosis, states that he does not believe that those cases, when thoroughly developed, are ever cured. I believe the same. While the rest, which my friend Lilienthal recommends, may be possibly one of the best hygienic regulations, I believe that the hygienic management of the habits of the patient to be

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equally important, and I have found that Dr. Talcott reminds us here that three causes work together, to wit: the indulgence of intemperance, of the appetites and passions of the body, and excessive mental energy. They find the indulgence of the passions rather the greatest; stimulants come next, then excessive mental prostration. Alcohol is found to be beneficial in the first stage. It is given in small doses for the purpose of undoing and relieving the condition which it has in a measure produced. I believe the administration of that remedy is in accordance with the law of similars. I consider it one of the best remedies to take the place of the bromides so extensively used in the old school.

DR. G. F. FOOTE, Stamford, Conn.: In the paper that was read in the bureau preceding this one there was considerable said in regard to the heredity of alcoholic disease; I wish to enter my protest against the idea that intemperance is a hereditary disease. From my own experience, which is somewhat extended in the management of this disease, I have learned this fact,—at least reasoned myself into it,—that we are all born about right. God, when he made us, made us with natural appetites. The child of the intemperate man or woman has the same appetites when born that the child of the temperate person has. Each one has to travel the same road to learn intemperance. It is usually commenced by indulging in the smaller forms of excitement, that is, pepper and spices introduced into the food, the indulgence of things which are not natural. The same children, if brought up properly, cultivate only the natural appetites with which we are all born as animals. We physiologically are simply animals. We could all grow up healthy men and women without this hereditary disease attaching itself to us. I do suppose, perhaps, that children of intemperate people may learn to become intemperate a little easier than those who are not intemperate; but they all have to learn, and I believe the habit commences in the domestic circle. We begin to indulge in stimulants with the use of spices, tea, coffee. We have no natural desires for these things. There is in the article read by Dr. Butler a matter which I wish to speak of. I want to make one correction in regard to Arsenic being a remedy for self-destruction, the tendency to suicide. I think he is mistaken. Arsenic is not a suicidal remedy, nor Aurum either. Arsenic is a remedy which produces a tendency to self-injury in society. I have seen one case where there was a tendency to injure the body. The patient was in a state of frenzy, and with her thumb had dug out her right eye, and partially cut off her right arm, in obedience to an injunction of the Scriptures. She was con-

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trolled by one dose of Arsenic. When seen, she was tied down in a chair, and had been confined there several times, with a gag in her mouth and her limbs tied apart to the bed. She was kept and had food administered to her in that position. A single dose of Arsenic, in this instance, relieved her so that she could get up and be about, and was convalescent, so far as this one symptom was concerned.

DR. MORSE: I rise to make one remark, or rather protest. It is in regard to the paper by Dr. Brown. While I am always happy to agree with Dr. Brown, to admire his thought, and the manner in which he puts it, I must, in behalf of the Institute, protest against a theory pronounced here to-night, "that every man or individual who loves the unseen is insane or a fool." I cannot believe that the great majority of the people who believe in the unseen are fools or insane.

DR. BROWN: I did not say so.

DR. MORSE: That is the understanding I got from your paper. I rise in protest to that sort of theory.

DR. BROWN: I said no such thing. I am not a materialist in that sense.

DR. VERDI: It was stated, in the course of this discussion, that, in the incipiency of these cases, rest of the mind is very necessary. I doubt very much if my friend, Lilienthal, could tell me what rest of the mind is? To take a man from his work, who has been driven almost to insanity by constant anxiety, and to place him on a couch is no rest for the mind. It is only a physical rest of his muscular system to take such a course. It generally is the case, when he has been driven almost to insanity by labor, that you will drive him further into his insanity; and you increase his anxiety, so far as the future of his business is concerned. The only rest for the mind that I can conceive of is, not what we might understand as quietude, but is a change of the mode of thought. That seems to me the only reasonable way of resting the mind. Therefore, instead of simply sending a man to a retired country place, to do nothing while his business is going to pieces, I say to him, Try to amuse yourself in some light matter; occupy your mind with some light thinking; or travel for pleasure, and see beautiful pictures or birds; or find amusement in playing billiards, or anything that will divert your mind from its fancies. His thinking of them operates to aggravate his symptoms. I think it is not well to take a man from his labor, particularly if suicidally inclined; you can never rest him by sending him home; he must have something to think of.

DR. LILIENTHAL: I did not say any such thing. I beg the

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gentleman's pardon. I did not say he could rest, or lie down on a couch. I said mental rest. Mental rest *is* to take him away from his business and to let him enjoy himself. If he has a taste for music let him enjoy that; but he must be away from his business, not for days, but for at least a year, until there is an entire change in his nervous system.

On motion, the discussion closed.

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SECTION IX.

REPORT

OF THE

BUREAU OF OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY.

W. A. PHILLIPS, M.D., ... Cleveland, O.
W. H. WINSLOW, M.D., ... Pittsburg.
H. C. HOUGHTON, M.D., ... New York.
DWIGHT B. HUNT, M.D., ... New York.
F. H. BOYNTON, M.D., ... New York.
C. E. BEEBE, M.D., ... New York.
F. PARK LEWIS, M.D., ... Buffalo, N. Y.
ALFRED WANSTALL, M.D., ... Baltimore.
D. J. McGUIRE, M.D., ... Detroit.
C. H. VILAS, M.D., ... Chicago.
G. C. McDERMOTT, M.D., ... Milwaukee, Wis.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 7.

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XXXIX.

CONJUNCTIVITIS FOLLICULARIS.

By F. H. Boynton, M.D., New York City.

By conjunctivitis follicularis we understand that form of catarrhal inflammation which is characterized by the development of roundish, pale-red formations, prominent above the surface of the membrane, and which wholly disappear with the termination of the disease, leaving no trace of their previous existence. These formations, which must be considered as lymph-follicles, enable us to distinguish this form of inflammation from simple catarrhal conjunctivitis. The secretions of conjunctivitis follicularis accord with other catarrhal inflammations, and like them may become blennorrhœic; but the existence of the lymph-follicles alters the form of the disease and materially influences its course. Swollen lymph-follicles are also found during the course of conjunctivitis granulosa and conjunctivitis crouposa.

These follicles are found most abundant and prominent upon the lower lid at the junction of the retrotarsal fold with the palpebral conjunctiva. They are transparent or whitish-red, and are usually about one millimeter in diameter. Those upon the lower lid vary in size, diminishing toward its free border, and are most abundant towards the commissures, their prominence depending upon their size, as well as upon the condition of the conjunctiva. If the conjunctiva is hyperæmic and serously infiltrated, the follicles may be either wholly obscured or distinguishable only by their lighter color.

These oval-shaped prominences are usually arranged in rows lying parallel to the retrotarsal fold, their longitudinal diameter extending in the same direction. These elevations are also found

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upon the upper lid, arranged likewise in rows, but occupying more especially the angles in the region of the retrotarsal fold; the central portion towards the free border remaining exempt. This central section is frequently occupied by small white specks, which lie in the level of, and are most noticeable upon, a hyperæmic conjunctiva. These white specks are found to consist of lymphoid elements, gradually merging into the surrounding healthy tissue, and devoid of any boundary. On the other hand, the prominent oval elevations known as lymph-follicles, when closely examined, exhibit the appearance of closed lymph-follicles with an enveloping capsule. These white specks may occur also intermingled with the true lymph agglomerations in the region of the retrotarsal fold, and are to be distinguished from them by their difference in size. The shape of the follicles is probably modified by the pressure exerted by the lid upon the bulbus.

The possibility here arises that the growth of the lymph collections designated as follicles may be progressive from the lymphoid cells to the development of the true lymph-follicles. Their rapid or slow development depends upon the degree of conjunctival inflammation. If the inflammation is violent, the growth is correspondingly rapid; but if the inflammation is moderate, then the growth is correspondingly slow. The duration of these formations depends upon the rate of their growth, as well as upon the character of the inflammation during which they were developed. If they have been developed in the course of a chronic hyperæmia, their subsidence will be slow and protracted. If, on the other hand, they have been developed with an acute inflammation, they will subside with a rapidity corresponding with the violence of the inflammation. When their formation has been slow they may last for years, but when rapidly formed they may undergo resorption within from four to eight weeks. These growths differ from those which appear during the course of conjunctivitis granulosa in the fact that they wholly disappear, leaving no trace of their previous existence.

It is worthy of note that the development of the follicles, and the inflammatory conjunctival changes which accompany them, do not induce changes in the deeper tissues of the lid, as is sometimes the case in conjunctivitis granulosa. The appearance of

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the follicles protracts the course of the disease, rendering it more obstinate, and its recurrence more probable. Peripheral affections of the cornea occur more frequently in this form of conjunctivitis than in conjunctivitis catarrhalis simplex.

There is a current theory that conjunctivitis follicularis and conjunctivitis granulosa are closely related and only gradually diverging processes; and that the lymph-follicles are identical with the formations closely resembling them which characterize conjunctivitis granulosa. The view, however, here presented is not in harmony with this popular theory. The acute and chronic forms may be distinguished from each other by an observation of their origin and development.

During the course of an acute conjunctivitis catarrhalis, these lymph agglomerations appear first in the neighborhood of the retrotarsal fold, extending from this point to the free border of the lid. They appear first upon the lower lid, and soon afterward upon the upper; but on the latter they do not present themselves upon the central portion of the conjunctiva covering the tarsus, but rather toward the angles. During the hyperæmic and infiltrated stage they are not visible at first; but later on, when the inflammation has somewhat subsided, they appear as small prominences upon the membrane, and the conjunctivitis, after the lapse of about ten days, begins to assume the chronic form.

Occasionally, during the acute stage of the inflammation, marked hyperæmia of the conjunctiva bulbi, swelling of the limbus corneæ, and pronounced pericorneal injection indicate the outbreak of a keratitis, which develops itself in the form of superficial ulceration. Now superficial vessels rapidly advance over the cornea, and thus hasten the reparative process.

The secretion in acute conjunctivitis follicularis is at first thin; it afterward becomes flaky, and still later may become muco-purulent. From this point it gradually merges into the chronic form, when the discharge becomes more bland, and also less in quantity, until there is scarcely sufficient to cause adhesion of the lids, and what little there is remaining is confined to the immediate vicinity of the elevated follicles. The conjunctiva itself undergoes very little change during the chronic form of inflammation.

The best method of examining the follicles in their natural

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position is to pull the lower lid slightly away from the bulbus while the patient is looking downward, when the elevations can be seen lying in parallel rows, and are not likely to be confounded with the folds into which the membrane is unavoidably thrown when the lid is everted. In this form of the disease the follicles may occupy years in their retrograde process. Patients but rarely come under observation in this stage, owing to the very slight inconvenience which they experience from the smooth elevations, there being no pronounced discharge or pain. Such eyes, however, are susceptible to irritation from a strong light, dust, wind, and other like causes, and come under observation only when the patients present themselves on account of other eye affections, or because of the tumefied and puffy appearance of the palpebræ.

The discharge from conjunctivitis follicularis is more contagious than that from simple acute catarrh. Not unfrequently we find several members of a family, one after another, attacked by different forms of conjunctivitis, after one member has suffered from follicular inflammation. Especially do we find this to be the case in asylums, almshouses, prisons, schools, etc. Another factor in the development of this condition is the living under bad hygienic influences, such as almost always exist in overcrowded charitable institutions. The cure of such cases is frequently impossible until removed to a better atmosphere.

As another cause we can mention the protracted use of certain medicaments, which may be employed in the treatment of other diseases of the eye. Among these remedies the Sulphate of Atropine is to be especially noted, the intolerance of the conjunctiva to its use leading in many cases to an acute follicular development, associated with which is often seen an acute œdema of the palpebræ, which become of a deep-red color, and develops an inflammation of the skin even to excoriation of its surface. This condition is frequently produced within an hour after the instillation. The conjunctiva sometimes presents this susceptibility to the action of an Atropine solution suddenly, even in cases where the drug has been used continuously for months previously without any unfavorable symptom arising; or one eye may present an intolerance to the drug, the other receiving no injurious effect from its use. These phenomena are often noticed in the

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cases of patients treated at their own homes, where no other cases of conjunctival disease existed; whereas, if their occurrence had been observed only in hospital practice, the possibility of a contagious secretion having come in contact with the affected eye might have given rise to a doubt as to the origin and cause of the follicular development and the consequent inflammation.

The large number of conjunctivæ presenting an intolerance to Atropia sulph. may perhaps be accounted for by the occasional employment of a preparation of the salt containing an excess of acid. Where such is the case the use of the remedy will produce a similar injurious effect upon all conjunctivæ to which it is applied. So a solution of the salt, which is in most cases harmless, the instillation of which is sometimes followed by an outbreak of conjunctivitis follicularis, may be considered as an active factor in the development of the affection.

The prognosis of this form of inflammation from Atropine is, in general, favorable. The œdema and inflammation of the lids will often in a few days subside spontaneously, while the follicles may remain for months. During the progress of the acute form of the inflammation complications may exceptionally arise involving the cornea and seriously impairing its functions, but the form of the ulceration is usually superficial, and yields readily to treatment, or subsides with the decline of the inflammation.

Another cause may be found in the use of mercurial ointments, which are applied to the conjunctival sac.

In the chronic form the prognosis is always favorable. Months and even years may be occupied in the restoration of the conjunctiva to its normal condition. As a consequence of this form of inflammation the conjunctiva may remain sensitive, and subject to relapses from irritating causes.

Treatment.—For the successful treatment of any form of follicular conjunctivitis the causal influences must, as a matter of course, be removed. In the treatment of the acute form, followed by a high degree of inflammation, the application of the ice-bag has afforded me much satisfaction. As internal remedies, Aconite in the very beginning, followed by Euphrasia if the secretion be muco-purulent and excoriating, if bland by Pulsatilla,

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will rapidly cause a subsidence of the first stage. When the disease has passed into the subacute or chronic form, with a discharge which has become thin and diminished in quantity, the use of Natrum muriaticum will, in the majority of cases, complete the cure. In this stage I have found the topical application of a weak solution of common table salt a valuable adjuvant to the other measures employed.

Occasionally, in the case of the failure of Natrum muriaticum to afford the desired relief, it may be found necessary to use Alumen. I have not found it necessary, in the successful treatment of this affection, to use any other remedies, all cases persevering in attendance having been cured in a space of from two to twelve months.

For much of the material contained in the above consideration I am indebted to the article of Professor Sæmisch in the *Handbuch der gesammten Augenheilkunde*, vol. iv.

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XL.

PHLYCTENULAR CONJUNCTIVITIS.

By W. A. Phillips, M.D., Cleveland, O.

The synonyms of this disease are scrofulous or strumous ophthalmia, exanthematous ophthalmia, remittent ophthalmia, and herpes of the conjunctiva.

The anatomical characteristics of phlyctenular conjunctivitis are substantially identical with the tissue changes observed in the cornea when this disease attacks the latter structure; and in view of the fact that the epithelial coat of the conjunctiva is continuous over the surface of the cornea, that the disease is so frequently exhibited at the limbus conjunctivalis, it is deemed admissible to speak of the peculiarities of the phlyctenular eruption as it affects both the conjunctiva and the cornea. As I write for the benefit of the general physician, I shall not challenge the criticism of my fellow-specialists respecting the nice points of distinction in the morbid changes which lie at the foundation of the varieties of this affection and the forms of inflammation that simulate it. I cannot perhaps better picture to you my subject than by assuming an imaginary case and following it through the possible changes that might occur in actual practice. The supposed patient is a child from two to six years of age, of an emphatically scrofulous habit, evinced by a group of features more quickly appreciated than described, prominent among them being a waxy, transparent complexion, flesh soft, whether the child be plump or scrawny, subject to glandular enlargements, with tendency to catarrhal inflammation of the throat and nostrils. The patient enters your office holding the head

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down, a bandage about the eyes, both hands or the arm being held tightly over the bandage, while the regularity of the vigorous inspirations through the nostrils to arrest the flow of tears and mucus therefrom lead you to query whether the child is not propelled by means of a small high-pressure engine in its head. The history given you will be that the child first complained that the light hurt the eyes, that the tears flowed freely, and that more or less pain was experienced. You proceed to make an examination by removing the bandage and asking the child to look up, which you speedily find it cannot do, or more perspicuously, which it won't do. Circumstances now demand that you place the youngster across the lap of an assistant, and placing its head between your knees you make yourself master of the situation and take a survey of the case. If the trouble has existed for some days you will find the lids swollen and spasmodically closed, and probably excoriated at the outer angles in the folds made by tightly closing the œdematous lids. This soreness is caused by the hot, irritating tears, which keep the lids constantly wet. Inspection of the eyeball is now accomplished by placing the tip of the forefingers directly on the edge of the upper and lower lids respectively, below the lashes of the upper lid and above those of the lower, and then pushing the edges of the lids backwards in a direction corresponding with the curvature of the eyeball. The upper lid must be pushed well underneath the brow, otherwise no view of the cornea will be obtained. Having dextrously done this, if the cornea is not in sight, hold the lid in that position a few moments and frequently the globe will roll downwards of itself; if it does not it must be rotated by grasping the conjunctiva near the corneal margin with a fixation forceps and gently making traction till the cornea is fully exposed. Generally the cornea will, for the most part, be found clear and bright; at its margins, however, a circumscribed papular swelling (phlyctenule) will be seen, which is the apex of a number of conjunctival and subconjunctival bloodvessels, which extend backwards in a radiating manner and can often be traced nearly to the retrotarsal fold (fornix). They sometimes bear a striking resemblance to pterygium, and in chronic cases, unattended by severe irritation, have been mistaken for it, and hence

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some remarkable cases of cure of pterygium have been reported as due to the administration of Sulphur[30]. The phlyctenules appear at first as vesicles containing a turbid fluid. Bursting they leave a slight loss of substance, thus exposing the terminal ends of the nerve-fibres, which is the occasion of the excessive ciliary irritation. Several of these inflammatory points may appear scattered over the cornea or on the scleral portion of the conjunctiva, but more frequently they are found in groups. After the vesicle bursts and discharges its contents the small ulcer thus formed may continue to increase in depth and diameter, and, according to its location, directly over or near the margin of the pupil, it may seriously threaten the function of the eye. A small cluster of them may coalesce and together form a large superficial ulcer, which, if not arrested before a considerable part of the anterior laminæ of the cornea is destroyed, may permanently impair the sight.

After the vesicle ruptures and discharges its serous contents it soon becomes the seat of a grayish fatty-looking detritus, consisting of inflammatory products and shreds of epithelium, and may quickly heal over or become changed into a well-defined ulcer. When the phlyctenule is situated some distance from the limbus its fatty, whitish surface is generally much larger than when located near the cornea. In addition, you may discover that there is a highly congested state of the entire conjunctiva, and that a marked catarrhal secretion is present. The latter may increase so as to become decidedly purulent, and demand primary attention appropriate for the most part to catarrhal or purulent conjunctivitis unaccompanied by an herpetic eruption. Not unfrequently one or more points of inflammation occur near the margin of the cornea, in the character of nodules, which do not change to a lymph or pus vesicle. They present a very red, angry appearance, and are surrounded by a zone of exudation extending into the corneal laminæ, and produce sometimes a very troublesome opacity known as herpetic pannus. Iritis will occasionally be found to coexist with the above condition; but more commonly the disease will be complicated with, or rather may be an extension of, an eruption originally confined to the margin of the lids (blepharitis), which in turn seems to be a

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continuation of an eczematous eruption affecting the ears, face, or scalp, or all combined. Having at a glance determined this much concerning the morbid condition of the child, which is probably crying lustily by this time, you make inquiry, and learn that the trouble has been accompanied by heat and an itching sensation in the eye; that there has been great dread of light, profuse lachrymation, and perhaps, too, an excoriating discharge from the nose, and you proceed to a summary of the case, as follows: I find here a decidedly hyperæmic condition of the conjunctiva, with here and there a triangular fasciculus of bloodvessels apparently feeding a small vesicle or ulcer, as the case may be. One of the phlyctenules is very recent, while small whitish specks on the cornea, did they exist, would indicate that the trouble is a chronic one, and that small ulcers have occurred some time previously. This spasmodic contraction of the lids indicates severe ciliary irritation, and accordingly there is pain, profuse flow of tears, and dread of light; while, at the same time, the lids are swollen, excoriated at the outer angles, edges red and thickened, and the lashes glued together in bundles, the latter symptom indicating that the glands and follicles of the lashes are affected; hence you conclude that the case needs your skilful consideration. Accordingly, before releasing the little unfortunate, you at once institute measures of relief. The lids are to be dried with a soft cloth, including the excoriated portion, if it exist, and the edges of the lids to be painted with cosmoline or with sweet cream. If blepharitis be present, the crusts are to be removed from the lashes by softening them with a weak solution of bicarbonate of soda, and then washing with fresh water. Afterwards the following cerate should be applied once or twice a day as the case is mild or severe:

℞. Graphites, ... gr. viij
Vaseline, ... ℥j.—M.

In case you should discover that a large ulcer exists, the following should be used at least three times a day:

℞. Atrop. sulph., ... gr. iij
Aqua dist., ... ℥j.—M.

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The object of this is to secure wide dilatation of the pupil, in anticipation of perforation of the cornea. There is little doubt, too, that Atropia exerts a modifying influence over the ulcerative process; but not enough, I am satisfied from my own experience, to demand its use for that purpose alone. This remedy is not to be neglected if iritis coexist, but should then be employed every two hours, until dilatation of the pupil be secured. Should any symptoms of atropia poisoning occur, the "drops" should, of course be used less frequently. In the event of finding a somewhat profuse muco-purulent discharge from the conjunctival surfaces, this symptom will require your first attention, for the reason that ulceration of the cornea is favored, or may be previously induced, by the swelling of the ocular conjunctiva. For the relief of this complication I would beg to refer you to a paper on "Conjunctivitis," presented by another member of this bureau.

Having thus briefly hinted at the complications and their management, that you may know what and how to study up the peculiarities of your case, permit me to call your attention to a few internal remedies, which in typical cases will generally prove equal to the demand.

The number of remedies ordinarily required from which to select is small, and I place them in the order, as I appreciate them, of their value. I give only a few indications for their use, referring you to the Materia Medica, or preferably to Allen and Norton's *Ophthalmic Therapeutics*.

Sulphur.—The cases are few in which the treatment should not be commenced in the use of this remedy, in view of the almost invariably marked diathesis of the patient. Independently of this general indication, however, we may note, as follows: Pustular or eczematous eruption about the ears, face, or scalp; sharp, darting pains, with a feeling as if needles were pricking the eye, together with a variety of other sensations, such as smarting, itching, and burning, which show an acute inflammation and a highly sensitive state of the tissues affected. If the case be chronic this remedy should in no wise be overlooked.

Graphites.—This is especially to be selected, provided there be a scaly or scurfy eruption on the skin; or crusts on the lashes,

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which show that the hair-follicles and the neighboring glands are inflamed; while excoriation of the skin in the folds at the outer angles of the eye, and an acrid discharge from the nose, still further suggest this remedy.

Pulsatilla.—There is no remedy in the homœopathic list whose action affords more satisfaction than Pulsatilla in those cases which exhibit little or no dyscrasia, aside from the conjunctival eruption. There is generally very little photophobia, though it is to be observed, as a rule, that the three symptoms of photophobia, lachrymation, and pain should not singly determine the choice of a remedy, as they are really due to ciliary irritation, and sustain a very constant ratio to each other as regards their severity. The tears are not so excoriating as in the remedies previously named; the conjunctival discharge, if any, is commonly catarrhal, or only mildly purulent. The lids are subject to styes. If there is reason to believe that the eye symptoms are aggravated by any uterine disturbance, or by gastric derangement, the indications will be still further confined.

Mercurius.—The different mercurial preparations are of special service in this disease, Cinnabaris, Merc. cor., and Merc. nitras being my favorite preparations. If there be reason to believe from the appearance of the patient, or the history of the ancestry so far as it can be definitely ascertained, that a syphilitic taint invades the system, there should be no hesitation in selecting some form of this remedy, and using it persistently. It will be particularly serviceable when the discharges from the eyes or nose are thin and acrid; if the patient be extremely sensitive to heat or cold; aggravations at night; clammy sweats, with a desire for very cold water, which immediately chills the body upon drinking. Enlarged cervical glands, which are tender to the touch, or which easily suppurate, with apparently little inflammatory action, afford evidence of a condition calling for the use of Mercury.

Rhus tox.—Rhus is adapted to cases marked by excessive photophobia, lachrymation, and spasmodic closure of the lids. The conjunctival phlyctenules are accompanied by a vesicular or pustular eruption on the face, which is very irritable, producing great itching and burning, and which is sensitive to pressure.

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The existence of rheumatic symptoms would complete the picture of a case in which this remedy would be substantially a specific.

Arsenicum.—I look upon this remedy as indicated more by the general appearance of the patient than by any peculiarity in the symptoms afforded by the eye itself. It is to be regarded as wellnigh invaluable in very thin, illy nourished, hollow-eyed, languid subjects, for whom neither nature nor sanitary surroundings have done more than enough to enable them to eke out a miserable existence. This is a class of patients in whom inflammatory symptoms never run high, and hence the features of a case peculiar to great ciliary irritation are not present. The tendency of the phlyctenule is to terminate in ulceration, and the resulting ulcer to extend in circumference and depth, and to run an indolent course.

Tartar emetic, Calc. carb., Euphrasia, and *Conium m.* are each worthy of study, and may serve to help you to eventually secure a good result.

Local Measures.—I do not deem it advisable to recommend to the general practitioner the employment of local applications. The bandage may be sometimes of signal value; but if poorly adjusted, which it most certainly will be unless the physician has had instruction and experience regarding its application, it is better neglected than used in any case. I have therefore to urge, without regarding it any exhibition of egotism or selfishness on our part as specialists, that when a case in your care does not yield in a seasonable time to some one or more of the internal remedies mentioned, the patient should have the benefit of skilled advice before the opacity of the cornea becomes so great as permanently to impair the sight.

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XLI.

PURULENT CONJUNCTIVITIS.

By G. C. McDermott, M.D., Milwaukee, Wis.

Purulent conjunctivitis (*syn.*, purulent ophthalmia, Egyptian ophthalmia, contagious ophthalmia, etc.) is an inflammation of the conjunctiva, or mucous membrane of the eye. It is characterized by swelling and redness of the membrane and its subjacent tissues, by a profuse flow of muco-purulent secretion, besides an infiltration of sero-plastic lymph into the substance of this membrane.

Causes.—Probably the most common of the *exciting causes* is exposure to cold, though it may result from any of the following: Aggravated simple catarrhal conjunctivitis, owing to constitutional peculiarities or improper treatment; inoculation by towels, basins, associating in the same room with those similarly affected, or where several are confined in illy-ventilated apartments; bright light, or glare reflected from the water; also wind, dust, damp dwellings. It is frequently epidemic, without any perceptible reason for its appearance. Any exposure to the highly contagious character of the secretions causes the disease to spread, and this must be regarded as one very exciting cause. *Specific* causes are gonorrhœa and leucorrhœa.

Course.—Commencing with a feeling of heat, dryness, and burning, with sensation of sand or grit in the eye, and some lachrymation, there soon follows pain, more or less dread of light; after sleeping the eyelids are glued together with the secretions, and crusts are formed or dried on the cilia. After twenty-four to forty-eight hours more severe symptoms are de-

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veloped. The swelling and redness of the membrane increases; chemosis to a high degree is present; the muco-purulent secretions are poured out more abundantly; the upper lid becomes œdematous and hangs over the lower, often assuming an erysipelatous glow; the eye is closed; upon opening the lids the secretion pours out over the cheek; generally the retrotarsal fold, highly vascular and villous in appearance, bulges out between the separated lids, and the chemosed condition of the conjunctiva surrounds the cornea like a pad, the cornea being situated in the depression.

At this stage of high inflammation we may have the cornea implicated, the danger in cases of purulent conjunctivitis. Should the cornea show signs of invasion we notice a small haziness over a portion of its surface, which may spread until the entire surface is involved. The epithelial covering being destroyed, ulceration and sloughing of its deeper layers may take place.

It would seem that this necrosed condition is the result of loss of nutrition as much as one of inflammation. When there is a high degree of chemosis the vessels supplying the cornea are strangulated, and the cornea, losing its supply of nutrition, dies, or easily falls a prey to the destruction going on in contiguous parts. When we have implication of the cornea many dangers befall the eye. Our prognosis must be guarded, as many eyes are lost, and at times our treatment seems defied in its attempt to avert the disastrous results.

If a case is not very complicated, the disease merely affecting the conjunctiva and subconjunctival tissues, it runs its course, and results in convalescence in from two to four weeks. With complication the time is often indefinite, and many months may elapse before recovery, if at all.

Results.—The result of a purulent conjunctivitis may be resolution and recovery in a few weeks. But being of such a destructive nature, and liable to so many complications, we are not so fortunate as to have complete recovery. It is often the cause of chronic inflammation, producing what is known as trachoma, with all its attendant symptoms, pannus being a coexisting accompaniment.

When the cornea is involved we may have merely leucoma or

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complete transparency of its tissue remaining; but should deep ulceration, or a diffuse slough and ulceration of the corneal tissue take place, it is never clearly restored, but indelible traces of opacities remain.

In specific cases, or even in the more destructive and severe ones, we not unfrequently have complete loss of the eye. When there is ulceration or sloughing of the cornea, with perforation, the iris falling into the wound heals, and staphyloma results. In some cases with the rupture the lens is lost with the escape of the aqueous humor, and may cause complete atrophy of the eye. Iritis often occurs in cases where the ulceration has extended to the deeper layers of the cornea, and destructive inflammation of the deeper tissues of the globe not unfrequently follows, ending in general inflammation and total loss of the organ.

TREATMENT.—In this severe form of inflammation homœopathic therapeutics have won as brilliant results as in other forms of destructive diseases.

When we glance at the eye symptoms, as recorded in Allen's *Encyclopedia*, also in Allen and Norton's *Ophthalmic Therapeutics*, we have reason to feel proud in the possession of a law guiding us in the selection of remedial measures to combat so pernicious a trouble as purulent ophthalmia.

The treatment may be divided into constitutional, local, surgical, and hygienic.

CONSTITUTIONAL.—*Aconite.*—In the beginning, and probably not lasting over a period of from twenty-four to forty-eight hours. It is only suited to the first stage, not being indicated where we have muco-purulent discharge.

Apis mel.—Apis is frequently indicated, generally in the beginning. Smarting, with sensation of burning in the eyes; bright redness of the conjunctiva; very sensitive to light; eyes red and itching, feeling as if dust were in them; pains stinging and shooting; eyelids much swollen, red, and œdematous; chemosis, much photophobia, and lachrymation.

Argentum nitricum.—Experience has taught that this is highly curative, and our chief reliance in cases of specific origin. Congestion of the eyes; conjunctiva red, swollen, chemosed; mucus in the eyes, drying and forming scurfs on the lashes; con-

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junctiva of the eyes, and lids congested, inflamed, and red as blood. Around the cornea and towards the inner canthus the conjunctiva exhibits a red congested swelling; pressure in the eyes, as if too full; heat and pain in the ball when moving or touching it; the conjunctiva bulbi and palpebrarum look inflamed and infiltrated; a stinging, itching pain, as if occasioned by a grain of sand which has become lodged in the eye.

Calcarea carb.—Is often of service in cases of the leucophlegmatic constitution, and particularly in the complications which often happen, as ulceration of the cornea; also for leucoma, resulting from the keratitis. Swelling and redness of the lids, with nightly agglutinations; during the day they are full of mucus, with a hot sensation; smarting pain and lachrymation.

Euphrasia.—Biting in the eyes at times; biting water runs from the eyes; feeling as though the cornea were covered with much mucus; it obscures his vision and obliges him to frequently close and press the lids together in the morning; lids red and swollen; very violent stitches in the eyeball; eyes sensitive to candle-light; profuse, thick, yellow, muco-purulent discharge, making the lids red and sore.

Hepar sulph.—This remedy is of signal service where the complication of ulceration of the cornea, hypopion, and deeper invasion of the tissues has taken place. Lids red, swollen, and spasmodically closed; sensitive to touch; discharge yellow, purulent; marked photophobia; pains severe, aching, throbbing. Cold aggravates, heat relieves.

Mercurius.—Specific cases, as the gonorrhœal, leucorrhœal, and those found in syphilitic subjects; mostly adapted to the latter stages; characterized by excoriating muco-purulent discharge; redness of the conjunctiva; both palpebral conjunctiva red and injected; burning in the eyes; pains worse at night; cold applications soothing.

Nitric acid.—Suitable to cases dependent upon specific virus, as gonorrhœal and leucorrhœal. From the foregoing we have severe forms of the disease. Lids red, swollen, and œdematous; congestion and inflammation of the conjunctiva, with chemosis; profuse, thick, yellowish, muco-purulent discharge; marked photophobia and lachrymation.

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Pulsatilla.—Applicable in the mild form and latter stages; characterized by a profuse yellow flow of muco-purulent discharge; non-excoriating.

Though advised in the gonorrhœal form, in my hands it has not rendered the service I had expected.

The temperament so characteristic of this drug will also assist us in our choice of this remedy.

Rhus tox.—We would think of this remedy in a rheumatic diathesis, and when exposure to wet was the exciting cause. Lids œdematous, red, thickly swollen, and marked congestion and chemosis of the conjunctiva; profuse lachrymation when opening the spasmodically closed lids, together with yellow muco-purulent discharge; restless, tossing, and uneasy; patient finds relief by constantly changing position.

Sulph.—To be thought of when constitutional symptoms of scrofulosis are present, or where there is a psoric taint. The characteristic sharp, sticking pains, usually coming on from 1 to 3 A.M., together with yellow discharge, puffy lids, and darting pains, would lead to its choice.

LOCAL.—First, cleanliness. This is accomplished by *frequent* bathing of the eyes with tepid water, thereby washing away the discharge. Some suggest the use of a small syringe, injecting between the lids tepid water. In some cases, to insure cleanliness, the eyes must be washed every fifteen minutes, though usually every half hour to one or two hours will suffice. Chlorine-water is an excellent application. It can be used in quite full strength, but I prefer it diluted from one-third to one-half, and applied every three or four hours.

A solution of Nitrate of silver is admirable; generally from two to five grains to the ounce of water, and applied from four times, in some cases, to once in twenty-four hours, in the milder forms. It is to be used in those cases marked by a profuse flow of the muco-purulent discharge, swollen lids, infiltrated subconjunctival tissues.

A lotion of Alum, five grains to the ounce of water, and applied to the surfaces every three or four hours, has worked well in some cases. Also a lotion of Alum, three grains to the

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ounce, and Sulphate of zinc, one grain to the ounce, and applied every three or four hours, have worked very beneficially.

If the cornea becomes implicated, shown by cloudiness and loss of lustre, a solution of Atropia, two grains to the ounce of water, should be dropped into the eye three or four times a day.

SURGICAL.—In case of ulceration and threatening perforation of the cornea we should at once perform paracentesis, by opening the bottom of the ulcer and allowing escape of the aqueous humor, whereby the ulcer will be put in the best condition for healing. Atropia solution should be used afterwards. It may be necessary to perform tapping several times, always being governed by the progress of the case, and not allowing too great tension to exist.

In cases where extensive ulceration and perforation take place, with extensive anterior synechia, iridectomy may be resorted to in order to gain useful vision.

When the swollen lids produce excessive pressure upon the cornea, or too much pressure upon the eyeball, the outer commissure of the lids should be divided. While Wells, in his *Diseases of the Eye*, recommends this, in my limited experience I have not resorted to his advice, nor found it called for.

In case the chemosis is great, incisions radiating towards the cornea should be made.

HYGIENIC.—If purulent ophthalmia breaks out where there are many associated together, the strictest quarantine should be adopted. All infected cases should occupy separate wards, and not be allowed to even walk through rooms occupied by healthy eyes. The greatest care should be exercised by attendants, nurses, and others engaged in ministering to the patient's wants. The towels, wash-basins, bed linen, etc., should be particularly looked after, and ought not to be used by others.

If only one eye of a patient is involved the other should be protected by sealing the healthy eyelids and preventing, if possible, its infection.

Ventilation should be as thorough as is safe from climatic changes, avoiding sudden changes of temperature.

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The diet should be plain but nutritious, avoiding all condiments. If thirsty, drinks of cold water may be fully indulged in.

Rest, either in bed or upon the lounge, should be taken, with darkened room. In cases where the patient must be out of doors, as in coming to the dispensary, the eyes should be protected from cold, wind, dust, and bright light.

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XLII.

DIPHTHERITIC CONJUNCTIVITIS.

By C. H. Vilas, M.D., Chicago, Ill.

As I have never seen a case of pure diphtheritic conjunctivitis in the United States (and but few abroad) I must be pardoned for drawing to a great extent on the writings of those who have repeatedly seen, understandingly diagnosed, and given this rare disease that careful clinical study so essential to contributing anything really valuable to our stock of knowledge.

Diphtheritic conjunctivitis is almost wholly unknown in England. Galezowski thought it worth while to point out to me a case in his Rue Dauphine Clinic, in Paris, as something interesting even to him, and no case was seen in De Wecker's Cherche Midi Clinic. Hirschberg's assistant said it was not then prevalent in Berlin, but von Græfe's experience has made us all familiar with its terrible ravages there. It is not very common in St. Petersburg, nor in Vienna. Several well-marked cases have been reported in New York. Green reports but one case ever seen by him in St. Louis, and that not well marked. Von Tagen reports cases in Cleveland. Angell says it is very rarely, perhaps never, seen in this country. Cases evidently diphtheritic in their origin, and yet not true diphtheritic conjunctivitis, as the disease is understood in Germany, are also occasionally seen. I have had one such with recovery, and others have been reported in Chicago. [False membranes sometimes form in the conjunctivæ of those in a low state of health, and by their superficial resemblance have been erroneously classed with this terrible scourge, thus swelling the list of cases.]

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A typical case, however, presents about the following condition, as taken from Macnamara's work on the eye, which, being copied from the German authors, is essentially correct with the standard of von Græfe.

"On examining the conjunctiva we shall find it of a buff tint, streaked here and there with a reddish coloration, the inner surface of the lids presenting a mottled appearance. This arises from the buff-colored fibrinous formations, which infiltrate the part, exerting pressure on the vessels, and stopping the circulation through their smaller branches; some of the larger vessels remain patent, while others give way, and their altered contents, staining the fibrinous formation around them, produce the mottled appearance referred to.

"The contrast, therefore, between the condition of the mucous membrane of the lids, in this the first stage of diphtheritic, and that of purulent conjunctivitis, is very marked; in the latter the mucous membrane is swollen, and of a uniformly deep scarlet color, with spots of ecchymosis scattered over its surface, the enlarged and prominent villi giving it almost the appearance of a granulating sore, whereas, in diphtheritic conjunctivitis, the mucous membrane is of a buff or drab color, comparatively smooth, mottled over with superficial patches of exudation and extravasated blood, and a few large and contorted vessels are usually seen on its surface. If we attempt to remove any of this fibrinous formation we shall find that it adheres firmly to the conjunctiva; we may detach it, but it breaks away in shreds, and from the jagged surface of the wound which is left, a bloody, serous fluid oozes away; the formation, in fact, is by no means limited to the surface of the conjunctiva, but exists principally in the submucous connective tissue.

"The changes and appearance of the conjunctiva above described are not confined to the eyelids; the same condition exists in the mucous membrane covering the sclerotic, the fibrinous formation infiltrating the conjunctiva throughout the whole of its extent, and too often extending to the cornea."

Such is the appearance presented by a typical case. It is usual to divide the disease into three stages, and these are preceded and accompanied with other symptoms.

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"The period during which the formation is being produced in the connective tissue may be considered as the first stage. It usually lasts about six days, and is accompanied with fever and great pain in the eyes, extending to the temples and head; this pain is terribly increased if we attempt to open the eyelids, which are swollen and of brawny hardness. The temperature of the part is sensibly increased. The secretion at this period is scanty and serous. As a general rule both eyes are affected, the disease being a local manifestation of a general disorder.

"The second stage is one of reaction, degenerative changes taking place in the fibrinous exudations, which become softened and broken down. The detritus thus produced, together with pus-cells from the connective tissue, and disintegrated blood-corpuscles are thrown off from the surface of the conjunctiva as a bloody, purulent discharge, containing shreds of fibrinous substance, supposed to have very irritating properties. The appearance of the everted lids is now completely altered, and nearly approaches that of the second stage of purulent conjunctivitis. The vessels are dilated, and turgid with blood, the surface scarlet, but still presenting some patches of yellow exudation; the discharge is abundant. The patient is now almost free from pain.

"The second stage varies in its duration, in proportion to the amount and depth of the primary croupy infiltration; if this has been great the suppurative stage will be prolonged, and the reverse if it is scanty or superficial.

"In the third stage of the disease the inflammatory action subsides, and the effects of the previous changes which have taken place in the conjunctiva become apparent. Of these the destruction of the subconjunctival tissue, consequent on the deleterious influences exercised by the fibrinous formation on the part, is most obvious; and in the reparation of the damage thus done cicatrices are formed, which, in contracting, press upon and obstruct the few remaining vessels of the conjunctiva, so that the mucous membrane may at length be entirely destroyed, and replaced by white, glistening, cicatricial tissue. The duration of this stage will vary with the amount of destruction already effected, but, like most reparative processes, it is usually prolonged."

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It could not be expected that such a dangerous injury could be inflicted on the conjunctiva without involving the neighboring parts. As in purulent conjunctivitis, the cornea is especially liable to become involved, and generally breaks down totally, a large staphyloma resulting. Should it escape this the consequent rubbing it is exposed to from the resulting conjunctival roughness destroys its transparency, and there results loss of vision. The lids also are apt to become inverted from the resulting cicatrices, or adherent to the globe in the reparative process.

Thus, without going farther into the pathology so ably elucidated, and fully considered in the German and French works, reference being especially had to Stellway's *Zehrbuch der Augenheilkunde*, and De Wecker's *Maladies des Yeux*, we see that the prognosis must be gloomy and the treatment unsatisfactory. The latter mainly consists of an expectant plan, and the administration of iron and nutrients, such as beef tea, under the old-school practice. Local treatment has seemed to many to injure, and has been strongly deprecated.

The absence of the disease in my locality, and the total lack of recorded treatment of value, owing to the infrequency of the disease elsewhere, must be an apology for offering no homœopathic treatment. Should the disease ever become well known in America doubtless the practical application of our remedies to the recorded symptomatology would be immediate.

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XLIII.

CONJUNCTIVITIS GRANULOSA.

By Alfred Wanstall, M.D., Baltimore, Md.

Having been requested to furnish a paper on "Perforating Ulcer of the Cornea with Trachoma," I was led to produce some remarks under a different heading, for the following reasons: Perforating ulcer, according to my experience, is not characteristic of trachoma so called. Again, the literature at my disposal contains nothing on this form of ulceration with the trachomatous disease. I have seen, though rarely, ulceration with trachoma go on to perforation, but can give no special points wherein it differs from the ordinary perforating ulcer. As ulceration of the cornea when accompanying trachoma can be considered only as a symptom or complication of the so-called trachoma, I cannot limit my remarks to the corneal affection alone, but, of necessity, must dwell on the nature and course of the fundamental affection.

Under the term trachoma is commonly included several affections of the conjunctiva, occurring separately or mixed one with the other. The differential diagnosis and special characteristics in regard to nature, duration, results, etc., of conjunctivitis follicularis, conjunctivitis granulosa, and enlarged papillæ (papillary trachoma) have been so well described and established that there can be no further necessity for using the name trachoma, as it only leads to confusion; besides, it is of the utmost importance with reference to statistics and the results of treatment to separate these forms of disease, as far as practicable, according to their difference in pathological changes, duration, and ultimate results.

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As this paper is written for the benefit of physicians not specially engaged in the treatment of eye diseases, and not expected to be familiar with the recent ophthalmic literature, I will make a few remarks discriminating between these forms of ophthalmia.

"Conjunctivitis follicularis is so characterized that the inflammatory catarrhal changes of the membrane are accompanied by the development of round, pale-red, half-spherical structures, which project above the plane of the membrane, and with the ceasing of the process again disappear without leaving a trace." (*Græfe und Sæmisch*, Bd. iv, p. 39.) "Conjunctivitis granulosa is so characterized that the inflammatory changes of the membrane, which can appear in different intensity as hyperæmia, serous infiltration, swelling of the papillary bodies, and increased perverted secretion, are accompanied by the development of roundish, grayish-red projecting structures, which show themselves especially in the region of the fornix on the conjunctiva palpebrarum, always suffer definite changes, and lead very frequently to secondary changes in the cornea and deeper parts of the lid." (Ibid., p. 39.)

The enlarged papillary bodies need no defining; they occur independently as the result of irritation, are an almost constant accompaniment of the latter form of conjunctivitis, and are rarely present with conjunctivitis follicularis. Conjunctivitis follicularis is a disease of the lymph-follicles of the conjunctiva, as an increased accumulation of the lymphoid elements within the closed lymph-sacs. This contagious disease in the acute stages can be accompanied by considerable inflammation, and is not infrequently met running through entire families and schools. Some of our New York colleagues will remember an epidemic of this trouble which was present in the public schools in that city about two years ago, which apparently originated from the public baths. It appears more frequently without an acute stage, and with very little conjunctival irritation, while the follicles can be developed to an enormous extent. It rarely causes corneal trouble, and then almost always during the acute stages, when it may excite peripheral superficial ulceration, which seldom assumes a serious character.

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Conjunctivitis granulosa differs from conjunctivitis follicularis, with which it is often confounded, in many particulars. Pathologically the granulations are to be considered as new formations, and not as a diseased condition of pre-existing physiological structures. Like the follicles the granulations are found in the fornix conjunctivæ of both the upper and lower lids, but, unlike the follicles, are not limited to these localities, nor are they so regularly arranged in rows. The individual structures are less prominent than is the case with the follicle, on account of the accompanying swelling and infiltration of the conjunctiva hiding them, and are accompanied by more inflammatory irritation, pain, etc. The infiltration of the mucous membrane frequently extends to the stroma of the lid, imparting to it a very considerable thickness and hardness, which is especially noticeable on everting, and which in many cases is not only difficult but extremely painful.

The morning aggravation so characteristic of this affection is, in my opinion, analogous to the pain felt in an inflamed muscle or joint on beginning to move it after a period of rest, and is caused by the relations which the inflamed and irritated stroma has assumed during the hours of rest being disturbed by the motion of the lids on waking, and not by the disturbance of the interlacing of the uneven surfaces of the granulations with one another, or with the conjunctiva bulbi; I believe this rarely if ever occurs. Otherwise, the morning aggravation should be more marked with follicular conjunctivitis, as here the striking prominence of the follicles and their regular arrangement in rows favors to a greater extent this interlacing of the individual structures during rest.

Conjunctivitis granulosa, like conjunctivitis follicularis, frequently develops without marked symptoms of irritation (conjunctivitis granulosa simplex). It more frequently originates as an acute affection, with marked inflammatory accompaniments, and as the result of contagion (conjunctivitis granulosa acuta).

The granulations develop from the stroma of the conjunctiva, and are not separated from it by a surrounding membrane, as is the case with the follicles. The deeper parts of the granulation consist of connective tissue, which, towards the surface, gradu-

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ally becomes less compact, finally breaking up and disappearing, to be replaced by round, closely connected cellular structures. The granulations contain vessels directly continuous with those of the stroma of the conjunctiva; they always undergo cicatricial contraction, while the follicles disappear without leaving a trace.

Granulations may be confounded with two pre-existing structures of the mucous membrane, the lymph-sacs and the papillæ; with the first it has been shown they have nothing in common; to the latter they show a striking resemblance histologically, but differ with reference to position, form, and especially structure. The enlarged papilla has only to do with a multiplication of the normal relations, and may maintain the normal relations by the growth and expansion of the epithelial covering. The granulation originating in the depths, as does the papilla, shoves the upper layers of the mucous membrane in front of it; and when it originates on the place of a papilla it also shoves this, together with the epithelial covering before it. The base of an enlarged papilla remains in the plane of the mucous membrane and is not sheathed in the depths, as is the case with the granulation. Again, granulations occur on those parts of the conjunctiva which are normally free from papillæ; they can extend upon the conjunctiva bulbi to the limbus cornea, and even involve the cornea itself. A good comparison may be instituted by alternately examining the everted lids of a case of purulent conjunctivitis and a case of acute granular conjunctivitis. The direct application of the finger to the everted mucous surfaces furnishes a valuable means of differentiation.

As already mentioned the granulations terminate in cicatricial contraction, which frequently involves the other tarsal tissues in the process; the tarsus itself suffering most, undergoing contraction, softening, fatty degeneration, or absorption, with destruction or displacement of the hair-follicles, as is often manifested by the trichiasis and distichiasis. The palpebral fibres of the orbicularis muscle are even involved in the process, giving rise to anomalies of form and position of the lids. That cicatricial contraction results in those cases that have never been subjected to the use of the caustic, or other irritant, as well as in those that have, there can be no doubt. Patients frequently present

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at the clinics with extensive cicatricial contraction of the tarsal conjunctiva (conjunctivitis granulosa in stadio cicatriceo), from whom the most careful questioning in regard to local treatment, or treatment of any kind, will always elicit negative replies.

We will now come to briefly consider some of the dangers to the cornea. In general, ulceration of the cornea is not an uncommon accompaniment or complication of conjunctivitis granulosa. Deep and extensive ulceration is somewhat rare, while pannus and superficial ulceration is a very common complication. The integrity of the cornea is in the greatest danger with the violently acute cases of this disease, to a less extent with the subacute form, and least with conjunctivitis granulosa simplex.

Acute cases of granular ophthalmia are occasionally met which threaten the early and entire destruction of the cornea by sloughing or gangrene, which is frequently hastened, and even caused, by injudicious treatment, as the untimely application of Nitrate of silver and the like. The cause of this sloughing may be considered as traumatic, and I shall pass it by without additional discussion, as it was considered in a paper on sloughing of the cornea in general prepared for the Institute last year. Superficial ulceration is more common with conjunctivitis granulosa simplex, deep and extensive ulceration with the acute and subacute cases, and frequently during the acute exacerbations of chronic cases, and is more often the result of trichiasis and distichiasis than of the granular process itself.

Keratitis pannosa, an exceedingly common accompaniment of conjunctivitis granulosa, and peculiar to this form of ophthalmia, consists of a new formation of vessels in the superficial layers of the cornea, which now involves a part of its surface, again covers it completely, and is accompanied by superficial ulceration and infiltration. The entire surface may be covered by a thick opaque network of vessels (Pannus crassus, carnosus), or the network can be wider-meshed and more transparent (Pannus tenuis). This new formation of vessels is not always limited to the superficial layers of the cornea, but by gradual extension it frequently involves the entire parenchyma.

Pannus is commonly of long duration, and can eventually result: 1st, in recovery, leaving a certain amount of corneal tu-

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bidity as a result of the superficial ulceration and infiltration; 2d, in evident flattening of the cornea without apparent diminution of its diameters; 3d, in atrophy of the cornea, with which it may regain a certain amount of transparency, and is exceedingly prone to become ectatic; and 4th, in the cornea changing into contracted scarry tissue, leaving it opaque and diminished in diameters. Pannus is usually regarded as a traumatic affection, though there are facts, such as the occurrence of granulations on the cornea, and its scarry metamorphosis, which speak against its traumatic origin and point towards an extension of the granular process to the cornea.

Treatment.—The treatment may be considered under general or hygienic, medicinal, and local. Hygiene should always be the first, and is the most important element for our consideration. As the etiology of conjunctivitis granulosa consists in unfavorable surroundings, such as impure air, bad food, and a debilitated system, our first efforts should be made towards correcting these; indeed, too much stress cannot be laid upon the importance of cleanliness, pure air, pleasant surroundings, liberal diet (preferably milk), etc. And as this disease is frequently the result of direct contagion it is self-evident that local disinfection, isolation of the patient, separation of their toilet articles, etc., are of vital moment. As a local disinfectant I can recommend nothing over and above *Aqua chlori.* As this article is not always to be had fresh, and rapidly loses its strength from exposure to light and air, its place may be taken by solutions of Boric or Salicylic acid. They are all tolerated by the eye, and, in themselves, are not offensive. These articles should not only be used by the patient and on articles in use by him, but should be liberally employed on the hands of the nurse or other attendants, and also freely used about the room. If the patient's condition and the weather permit a large part of each day should be passed in the open air. Alcoholic stimulants and the excessive use of tobacco should be prohibited.

Medication.—This subject involves the question of the curability of conjunctivitis granulosa by the internal administration of remedies, a point which I do not propose discussing at any length. The opinion seems to be, and in harmony with my ex-

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perience, that a cure (in the strict acceptation of the term) by any form of treatment never results, the disease always terminating in scarry metamorphosis; the degree of cicatrization varying from scarcely perceptible changes to almost complete destruction of the tissues involved, and always in ratio with the previous development of the so-called granulations. Certainly we know of no remedies producing a similar condition, so we are compelled to treat the special indications as they arise and not think of specific medication. All our efforts, therefore, should be directed towards assisting the disease to as speedy and favorable a termination as possible by whatever means we may possess, hygienic, medicinal, or local. The remedies most frequently employed are the following, and are the same as given by Allen and Norton under "Conjunctivitis Trachomatosa ac. et chronic," and to whose indications I can add nothing: Acon., Alumen exsic., Alumina, Argentum nit., Arsen., Aurum met., Belladonna, Calc. carb., Chinum mur., Cuprum al., Euphrasia, Kali bich., Merc. praec. rub., Merc. protiod., Natrum mur., Natrum phos., Nux vom., Petroleum, Pulsatilla, Rhus tox., Sulphur, Thuja occid.

Local applications are not only advisable but, in my opinion, requisite. It is not the use but the abuse and untimely application of local measures that does harm, and the questions remain to be decided what local applications shall we use and when shall we resort to them? During acute attacks of conjunctivitis granulosa, and during acute exacerbations of chronic cases, the local use of irritants and caustics are never admissible; they not only aggravate the conjunctival disease but even threaten the destruction of the cornea. At these times we should depend upon the action of our remedies, combined with local antiphlogistic treatment, preferably the application of the ice-bag, and if the severity of the inflammatory accompaniments is very great scarification should be resorted to; this does not exclude the local use of disinfectants, which may be freely applied to the everted palpebral conjunctiva, and indeed their energetic use is more indicated during the acute stages even than at other times.

It should always be borne in mind that the purpose of local applications is to produce irritation in order to promote absorption, never cauterization; the reason is apparent, cauterization

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not only increases the destruction of the tissues but adds to the subsequent cicatrization. In regard to the selection of the application, Nitrate of silver, Sulphate of copper, Aluminate of copper, Alumen exsiccatum, Acetate of lead, Tannic acid, and others are used, and are all of more or less value. In using the Nitrate of silver care should be taken to limit its action to the palpebral conjunctiva, otherwise unsightly stains of the ocular conjunctiva result; its action is best limited by a solution of common salt or with milk. Of the copper salts I prefer the Aluminate, as it is less irritative than the Sulphate, and it may be used for a long time. Burnt alum (finely pulverized) is especially useful in conjunctivitis granulosa simplex; it is only slightly irritative and allows frequent and long-continued application. Tannic acid and Glycerin will be found a very valuable application when pannus is present, with or without ulceration of the cornea. Care should be observed with reference to the frequency of the application of irritants, as these cases soon become accustomed to the local remedy and its effect is soon lost. The application should be made with care, thoroughly applied, and repeated only when the beneficial effect of a previous application seems to have ceased. If we see no result from one irritant, recourse should be had to another.

If keratitis complicates the trouble we should not allow it to lead us into attacking the cornea, but should give additional attention to the primary trouble; we should not forget that the conjunctival disease and the corneal complication stand in relation to one another as cause and effect. As the keratitis is really a traumatic one it is easily understood that the cornea illy bears additional irritation. Rest is now of primal importance; mucilaginous solutions and oil or milk may be placed in the conjunctival sac to prevent friction, and the remedies can be selected from those acting more energetically on the cornea.

This paper is not intended to be in any way exhaustive, and I have purposely avoided conditions and complications calling for operative interference.

In prognosing in cases of conjunctivitis granulosa we should never overlook the extraordinarily slow course of the disease, its liability to relapses, and its invariable termination in cicatrization.

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XLIV.

FOLLICULAR TRACHOMA.

By D. J. McGuire, M.D., Detroit, Mich.

That the particular form of this conjunctival disease may be the more clearly presented, I will briefly give the anatomical divisions of the conjunctiva.

1st. The conjunctiva palpebralis.

2d. The superior and inferior reflected portions.

3d. Conjunctiva sclerotica.

4th. Conjunctiva cornea.

The second part in this division being the principal seat of the disease under consideration, in it we find the closed symphoid bodies or follicles of Kraus. This portion also, besides being particularly rich in these bodies, is very loosely woven, and is connected with the orbital tissue by very wide-meshed, long, fibroid, flocculent, connective tissue, which admits of great displacement, thus permitting readily the comparatively large trachomatous developments so frequently seen in this region. Instead of the papillary elevations as seen on the palpebral portion, deep furrows are found, the larger of which, running nearly parallel with the tarsal border, give to this portion a transversely folded appearance. At this point the *pavement* epithelium of the palpebral portion gives way to the cylindrical variety.

Thus also we see that this part of this membrane consists of a so-called adenoid tissue; that is, a meshwork of connective tissue fibres, with a large number of cells resembling lymph-corpuscles.

It may be said that the follicular variety belongs to the retro-tarsal region, as the papillary does to the palpebral.

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The line of distinction between the different varieties of trachoma being necessarily somewhat arbitrary, I prefer, for sake of simplicity, to treat this as a defined disease belonging to the retrotarsal fold or region, and not to present it under the complex or mixed forms usually met with, it being commonly found combined with the capillary variety, in which case we find the sago-like bodies interspersed among the red elevated papillæ.

If the patient presents himself early, while he has as yet only noticed a slight agglutination of lids in the morning, slight roughness, or possibly a little drooping of upper lid on eversion, we notice the presence of the granulations in the form of grayish-white bodies like tapioca grains (the resemblance being between these bodies and *boiled* tapioca), more especially seen at the retrotarsal fold and in the vicinity of the angle of the eye; also likely to be more marked on lower lid.

Generally, however, this condition is soon followed by inflammatory symptoms, the conjunctiva becomes red and swollen, the papillæ hypertrophied and prominent, having the granulations scattered among them, giving rise to the mixed granulations described by Stellwag. The lids may be somewhat pulpy in appearance, and some chemosis exist around the cornea. The discharge, which at first was thin and watery, with perhaps a few yellow flakes in it, now becomes more copious, and of a mucopurulent character; the eyes are very irritable, and the patient experiences a sense of grit or sand in them; at the same time they are intolerant of use for continued work, and of light, dust, and wind; these conditions probably preceding an inflammation or pannus of cornea.

We very rarely in private practice find the classical "frog spawn" appearance, this being reserved for epidemics, which only occur in crowded communities where hygiene is neglected; being, therefore, most frequently met with in military practice.

To such an extent has bad hygiene been recognized in the etiology of this affection that it has been stated the hygienic condition of troops could be ascertained by an examination of the eyelids, and also that during an epidemic the next victims could be pointed out after observing the condition of these lymphoid bodies.

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Lœffler, a surgeon in a Prussian regiment, first described follicular granulation. At a later period it has also been described by Frank and Marston, and the connection between its development and bad hygienic conditions remarked by each observer.

The disease is not infectious, but is contagious, and the full severity of the epidemic form of conjunctivitis is only realized when the discharge is received upon eyes already prepared to suffer by the pre-existence in them of follicular granulations.

Although the absolutely exciting cause of this follicular enlargement may be said to be unknown, it would appear, from the number of cases presenting from time to time, from various classes, with this condition more or less marked, that the immediately exciting cause, in addition to bad hygiene, may be anything capable of exciting conjunctival hyperæmia.

According to Schweigger, if a portion of such a body be removed and placed under a microscope we find it to consist of lymph-corpuscles, and between it and the epithelium very delicate bloodvessels; also, generally on the upper surface, just under the epithelium, a number of broken fat-cells, which possibly give to them their peculiar yellow lustre.

These bodies, which once were supposed to be pathological, are now known to be physiological (Bruch, Henle, Kraus, Schmid), and under this condition of disease simply take on aggregation of tissue.

Having had no experience in the epidemic form of this disease, my suggestions in treatment will be understood to apply more particularly to the sporadic variety, as daily seen in the practice of the specialist. While I do not for a moment wish to underestimate the value of constitutional treatment in these cases, I must confess that in my own practice internal medication is chiefly relied upon to meet the complications as real conjunctivitis, keratitis, and any or all exacerbations as they occur. For I find in a large majority of the uncomplicated cases, no constitutional dyscrasia is sufficiently marked, or any other symptoms of sufficient prominence presenting to enable me to prescribe and await with confidence the result. Hence, while holding myself ready at any time to prescribe an indicated remedy, I continue diligently to make the *local* treatment, still believing that he

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who is also diligent in the study of his Materia Medica will, even in these cases, meet with a reward. Especially must we believe this to be true when we remember that the disease is rarely, if ever, seen uncomplicated. The indications are then to select the constitutional remedy, and to combat the local disease by suitable local treatment. The remedy which I find to be almost all-sufficient is the *Lapis divinus*, or *Cuprum aluminatum*. If the case is an old one, and very much papillary hypertrophy exists, the crayon of Cuprum sulph. will answer better; and, on the other hand, the case being mild, the simple crystal of alum may be better; and all three remedies may do good service in the same case applied at different times, according to indications. And just here, there being no precise rules governing these applications, is where the judgment of the physician is often severely tested, a judgment, too, which can only come of experience, for it is not so much *what* you apply as *how* and *when*. The same suggestion applies to the frequency with which the applications are to be made, for while in the beginning they may usually be repeated as often as every other day, this cannot be adhered to as a rule. The application should not be repeated until a sufficient reaction has taken place after the previous one. The interval will also require to be lengthened as the case progresses toward recovery.

The above-mentioned remedies may all be used with advantage in the potencies internally at the same time that they are being applied locally.

Alumen exsiccatum.—Applied by dusting the crude powder on the inner surface of lids, and washing off after a few minutes with water. *Tannic acid* x grains to 1 ʒ of Glycerin have been suggested by good authority, but having had very little experience in their use myself, I leave them to be spoken of in the paper on "Papillary Trachoma."

In the internal treatment of this disease the number of remedies from which we may select is necessarily large, but I will, in a brief and hastily classified manner, give prominence to a comparatively few.

During the early stage, when the patient complains of dryness, with rough sensation and heat in lids, we will think of Aconite,

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and later, being governed by the peculiar discharge, we will select from Argent., Euph., or Merc., in the *lower* potencies usually. If the case is already old or chronic, Ars. or Alum in the higher attenuations will occur to us. If pannus exists we will look to Aur. mur., Kali b., and Petrol. For acute exacerbations Acon., Bell., Nux. Nat. mur. will be called for if the case has already been treated by strong applications of Argentum, and the eye is very irritable. Rhus tox. I regard as invaluable at any stage when symptoms become very intense, with photophobia and profuse lachrymation. The Calcarea and Silicea subjects will also be met with, when these remedies will do good service.

Sulphur must always be kept in mind, either as an intercurrent or to be prescribed for its peculiar sharp pains and morning aggravations. Of course, such defect in the hygienic surroundings of patient as may be detected must be remedied, together with the correction of any existing defect in the refraction, and the adoption of the necessary measures to promote cleanliness, as bathing, and the use of an unguent, as Cosmoline, to prevent agglutination of lids.

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XLV.

TINEA TARSI.

By W. H. Winslow, M.D., Pittsburg, Pa.

This name in our nosological series indicates a disease of the eyelids, produced by a fungus, or complicated by its presence; but, owing to the similarity of symptoms, the difficulties of exact diagnosis, and the common treatment employed in diseases of the tarsal border, it is now understood to embrace several diseases of the margin of the eyelids.

As a large proportion of the cases we see are unaccompanied by fungus, the term should be discarded and *blepharitis marginalis* substituted, as this expresses in a less specific, but more generally appropriate way, the affections of tarsal integrity under consideration.

The causes of blepharitis marginalis are various and frequently obscure. Impairment of the general health, from any unhygienic influence, predisposes to disorders of skin and mucous membranes, and consequently of the eyelids. In strumous constitutions these tissues are exceedingly sensitive to irritants; there is likely to be excessive glandular action, and, if not general, at least local uncleanliness.

Non-medical persons are not alive to the importance of removing rapidly exfoliated and extruded cells and their debris, and both are likely to accumulate and to cause irritation. The tender eye and its protecting envelopes are much exposed to irritants, and children especially cannot remove the dust and other extraneous substances which the sweat washes to the edge of the eyelids, and which the wind deposits upon the protecting cilia. It is not strange that our clinics are beset by the blear-

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eyed children of the poor, whose homes are frequently in crowded tenements, or in the slop-flushed alleys of our badly governed cities.

Besides the general predisposing causes, we recognize exciting ones, which vary in different places. Exposure of the eyes to great heat, bright light, sharp winds, flying dust, sea-water, and a smoky atmosphere is dangerous to conjunctival integrity. Use of the eyes in poor daylight, or bad artificial illumination at school, in the counting-room, or over a microscope, may induce congestion of the globes and their appendages, with resulting blepharitis.

Errors of refraction predispose the lids to inflammation, and, according to some authorities, excite it *ab initio*. It has been my experience that abnormal refraction does more than simply inflame the margin; it is more likely to excite palpebral conjunctivitis, and crops of hordeola. In a case of myopic astigmatism, which came under my care, the patient had suffered from sixty-six styes in a period of six months. The objective symptoms of blepharitis marginalis are more important than the subjective. The affection begins usually in a slight hyperæmia of the conjunctiva, just along the border of the eyelids, in the upper more than in the lower, and this is accompanied by a little dermatitis, where the skin joins the mucous membrane. Branlike epidermic scales, partly matted in the cilia, and hanging to the edge of the lid, give a roughened appearance to it, and when detached by washing hard, or picking them off singly, the border is reddened, perhaps weeps serum from raw places, or shows bloody points.

The affection rarely disappears spontaneously; it increases, rather, in severity; the mucous border becomes thickened, the vessels multiplied, the submucous connective tissue hypertrophied and sclerosed, and the dermic margin accumulates masses of exfoliated epithelium, dried muco-pus, inspissated Meibomian smegma, broken or loose cilia, and organic and inorganic cereal particles. It is in just such beds of decomposing matter that spores or filaments of the *trichophyton* from the patient's body, from the body of a schoolmate, a horse, ox, dog, cat, mouse, or perhaps from decaying substances, are likely to find congenial

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soil for development and fructification. Mycelial threads meander through the moist nidus, creep down and pierce the cilia and their bulbous root-sheaths, and enter the open portals of the Meibomian follicles, and run riot upon their soft, greasy secretion. The presence of this epiphytic fungus, the specific name of which is yet in doubt, gives us the term which heads my paper,—*tinea*,—signifying a gnawing worm, and *tarsi*, of the eyelid; but the fungi are an accident, a complication of pre-existing disease, for which a statement of a poet gives authority:

"The night is mother of the day,
The winter of the spring;
And ever upon old decay,
The greenest mosses cling."

It has not yet been demonstrated that a disease of the eyelids, such as I have described, ever originated *de novo* from a fungus taking up its habitat upon the border of human blinkers.

Fungus, or no fungus, the disease may remain of moderate severity for a long time, and do little damage; but it is prone to induce conjunctivitis, excessive lachrymation, displacement of the lachrymal puncta, Meibomian cysts, hordeola, abscesses, thickening of the lids, narrowing of the palpebral aperture, and serious affections of the cornea. Some few cases have such a destruction of the skin along the edges of the lids from an excessive discharge, continual wiping, and strumous diathesis, that the fissure is bordered by a band of cherry-red, succulent, painful rawness, which gives a most disgusting appearance to the face.

The subjective symptoms are few, and not very characteristic. The patient complains that the lids stick together in the morning, are heavy, difficult to open, and the eyes feel as if they were full of sticks. There is soreness; the tears form easily and run over the cheeks, especially in a dusty, windy, or smoky atmosphere; there are sensations of smarting, burning, and heat, when the eyes are used much for close work, or by artificial light; there is shrinking from bright light and reflections from sandy beaches, smooth sheets of water, and plains of snow. A local discomfort follows the use of the eyes in the ordinary avocations

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of life, and the patient may be weak, listless, and discouraged from the continual worry and fears of blindness.

The treatment of blepharitis marginalis *seu* tinea tarsi must be local and constitutional. The surroundings of the patient should be as salubrious as possible; his personal hygiene should be examined, and modifications in food, drink, clothing, and bathing made if necessary. The eyes should be examined for refractive anomalies, and if any are found the appropriate correcting glasses should be ordered. If the cause of the affection can be determined, and should still be operative, it must be removed. It is sometimes necessary to slit up the canaliculi, and when the lids are much thickened and contracted a canthoplasty often proves of great value. The patient should avoid everything which causes irritation of the eyes, and use them as little as possible for close work until recovery ensues.

If the eyes are hyperæsthetic, London smoked coquilles should be worn as a protection from dust, smoke, wind, and bright light.

The local treatment is very important, and must be thorough and persistent in order to achieve success. The scales, loose cilia, and crusts should be removed from the edge of the lids by warm water, by picking with fingers and forceps, by softening with olive or almond oil, and the rough and perhaps raw surface should be smeared nightly with vaseline alone, or combined with a weak mercurial ointment. One that I find very efficient is composed of red oxide of mercury, gr. v, to vaseline, ℥j, well rubbed into a smooth ointment. Should this not effect a cure, the cleansed edge of the lids should be brushed with a weak solution of nitrate of silver three times a week. In some cases it is necessary to evert the lids and apply the silver solution to the conjunctivæ as far back as the inflammation extends, and the ointment should be applied at night as usual. These local measures will alone cure many cases; internal medication is not always necessary.

In cases grafted upon strumous, feeble, or plethoric constitutions, excellent results will follow the selection of remedies according to careful estimates of the diathetic tendencies.

I have used Sulphur, Hepar sulph., Calc. phos., Calc. iod., Iodine, Cinnabar, Graphites, Arsenicum alb., and Ars. iod., with

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excellent results, and think this list embraces about all the really useful medicines for this disease in the Materia Medica. I believe, and my confidence is based upon experience, that the measures advocated above, combined with the judicious selection and continuous administration of one of these medicines in tangible doses, will cure all cases of blepharitis marginalis, unless such profound pathological changes have resulted from long duration of the disease that few or no cellular elements of the primary tissues remain.

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XLVI.

OPHTHALMIA NEONATORUM.

By F. Park Lewis, M.D., Buffalo, N. Y.

With the exception of conjunctival congestions and granular trachoma, perhaps no species of ophthalmic disease falls more frequently under the care of the general practitioner than a purulent inflammation of the infantile conjunctiva; and even with the oculist few conditions demand the exercise of greater judgment, or call for more prompt, skilful, and judicious care, than ophthalmia neonatorum. In order that he may cut short the disease, or conduct it to a favorable termination, the physician must understand as far as possible the nature of the tissues with which he has to deal. He must understand their functions and the relation which they bear to other tissues. For not alone is a purulent condition of the conjunctiva inimical to its own integrity, but in a much higher degree does it affect the more delicate structures connected with it.

The conjunctiva, it will be remembered, is a mucous membrane, the secretion differing in no wise from that found in the bronchia or urethra. It is attached to the palpebral border of the lids, whence it extends backward beyond the tarsal cartilages, and thence nearly to the equator of the globe. It is loosely attached to the globe, except over the cornea, where it is intimately adherent. It passes again from the ball to the lower lid, where, at the palpebral fissure, it merges into the integument. As the conjunctiva passes from the upper lid to the ball it forms a small pouch called the retrotarsal fold. This anatomical fact is of considerable clinical importance, for in tedious cases, in which the membrane has assumed a healthy appearance, but the discharge

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continuing profuse, it will be found that this fold, which is not readily accessible, is the seat of the continued secretion.

Infantile conjunctivitis, like the gonorrhœal form, is usually due to the introduction of noxious matters into the eye. This may be due to want of cleanliness, be conveyed by sponges, towels, etc., or as suggested by McKenzie, and indorsed by Wells,* to the passage of the head through a vagina affected by a blennorrhœa. Stellwag † says, however, "this is certainly not a very frequent cause of purulent ophthalmia. The eyes of the child are closed during parturition, and also covered with a sebaceous material; hence inoculation at this time is scarcely possible." He counsels, as a prophylactic measure, the greatest care in cleansing the eyes after birth. Drafts of air, dust, early exposure to light, vitiated atmosphere, poor ventilation, and other unfavorable hygienic surroundings, are all, doubtless, prolific causes of the disease.

The disease often makes its appearance within a few hours after birth, and a large proportion of cases occur during the first month of infantile life. Both eyes are seldom affected at once, but the purulent matter is of so infectious a nature that it is almost impossible to preserve the second eye intact.

Purulent ophthalmia is a much more serious disease than the simple catarrhal affection with which children sometimes suffer. The latter is not usually of more than temporary duration, and is not followed by any serious consequences. The course of both diseases, in their initiatory stages, is the same. The eyes look red, and are filled with a watery mucus. Light is disagreeable, though in a less degree, than in iritic complications. The lids are opened with difficulty, while the borders seem red and irritated. If the disease is simply catarrhal in its nature, nothing more serious results. In the purulent form the inflammation increases, rapidly in the worse cases, more gradually in those which are less severe, so that the disease may be at its height at a period varying from two to five days. As the inflammation progresses the soft, loose tissue becomes infiltrated, and the lids are puffed and swollen, and so painful that they can with difficulty

* Sœlberg Wells, Diseases of the Eye. † Stellwag on the Eye.

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be everted. The stiffness and immobility is less, however, than that found in the diphtheritic conjunctivitis. The catarrhal discharge has become replaced by a pyrorrhœa. The lids on being opened allow the pus, bland and creamy, to pour over the cheek, as from an opened abscess. Often the lids are so much swollen that they protrude as tumors. The ocular conjunctiva becomes chemosed and surrounds the cornea like a pad. As the inflammatory symptoms subside the discharge gradually changes its character, the secretion becomes muco-purulent, and finally simply mucous, and it is this change in character, rather than in amount, that heralds the approach of resolution. The lids grow more flaccid and the chemosis disappears, but several weeks may elapse before the eyes assume a normal appearance.

It is at the period of acute inflammation that the worst consequences are to be feared. The cornea, it will be remembered, has no direct nutrient vessels, the conjunctival and sclerotic vessels extending in loops to its periphery, the cells being nourished by contiguity of tissue. According to Max Kniess* there is a continuous current flowing from the choroidal vessels through the non-vascular tissues and finding exit through Fontana's spaces. When, therefore, the tumescent lids press upon the ball the frail means of supply is cut off, on the one hand by congestion of the vessels around the limbus cornea, and on the other by preventing osmosis from the interior of the eye. The cornea suffers in consequence and must be carefully watched. Its transparency at certain points is dimmed, and turbid patches appear. These may increase in size until an abscess is formed, which on opening leaves an ulcer. Sometimes crescentic ulcers appear at the margin and rapidly increase until the sight is entirely destroyed by suppuration of the entire cornea. If a portion only of the cornea is involved it becomes thinned by the ulcerative process, until at last, unable longer to resist the normal intraocular pressure, it ruptures. The iris falls into the wound, and at best an anterior synechia results. Frequently, after healing, the cicatrix, being the least resisting portion, is again protruded, forming a true cicatricial staphyloma. Should the rupture be

* Archives of Ophthalmology, vol. vii, p. 347.

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sudden and extensive the lens is apt to be pushed forward into it and become cataractous. After the subsidence of an inflammation of high degree the lids are found sometimes to have become trachomatous and requiring still further care. It is seldom, however, that all of these evils cannot be avoided by careful attention on the part of the physician and nurse; but the possible, and if untreated, probable fatal consequences of the disease to the sight, render a knowledge of its course, prognosis, and more especially of its treatment, a matter of most vital importance to the practitioner.

According to no less an authority than Sir James Paget, the purulent secretion comes at once from the surface and the substance of the membrane. He says, furthermore, that in the higher grades of inflammatory action the pus-corpuscle is formed directly from the mucous leucocyte, and not as in open ulcers from the lymph-corpuscle. "And this character of the cells," he continues, "is often retained even after the product of the inflamed membrane has regained to the eye a more mucous appearance; for here, unless ulceration of the membrane have ensued, the process of recovery from inflammatory suppuration is not through such healing as in the former cases, but by a gradual return to the secretion of a more normal material, and in this recovery the proportion of corpuscles which possess the character of pus-cells diminishes by degrees, until at last they are not sufficient to give a purulent character to the fluid."* It is not necessary that the mucous membrane should be deprived of its epithelium in order to secrete pus; but should this occur, as it may from the continued use of strong caustics, an open suppurating ulcer results, which on granulating, cicatrizes and contracts, giving rise to entropium.

Treatment.—The object of our care must be, first, to prevent, if possible, the establishment of the disease, and, second, having become developed to mitigate its severity and lead it in the speediest manner to a happy termination. In washing the babe care must be exercised to prevent the admission beneath the lids of the vernix caseosa, or of soapsuds. Soft, clean linen cloths or sponges should be used to bathe the eyes and to remove

* Paget's Surgical Pathology.

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mucous and other secretions from them. In bathing the newborn child the nurse should be cautioned against employing the same washing materials upon the eyes that have been used upon the body. The hygienic surroundings must be as favorable as possible. Damp rooms, illy ventilated, with insufficient or improper food for the mother, are all prejudicial to the welfare of the babe, and render it more susceptible to the action of noxious influences, if they do not directly excite disease. The crowding together of many individuals in the same sleeping room is also to be avoided. Epidemics of purulent ophthalmia sometimes occur in public institutions in which these conditions are not observed. In a word, the prophylactic measures taken to prevent ophthalmic disorders are those governing the physician in his endeavors to insure the best physical condition of the infant.

After the disease has become established the first and great essential is absolute cleanliness. The lids must be opened, and the purulent matter washed away just as often as it forms. In serious cases this may be necessary every half hour, or even at intervals not longer than ten minutes, day and night. If the nurse be skilful this may be done with a fine camel's-hair pencil, but usually a small bulb syringe can be more readily employed. Should the temperature be considerably increased, cloths wrung from ice may be kept upon the lids. Such applications must be frequently changed, however, otherwise they will act as a poultice, aggravating the condition they were intended to control. If the sensitiveness to pressure be not too great small bags of pounded ice may replace the iced cloths.

It is to the administration of internal remedies, however, that homœopathy owes its superior success in the treatment of this disease. Seldom under the influence of the proper similimum is found any of the more serious consequences to which reference has been made; and frequently, when these unfortunate complications arise under unskilful caustic treatment, they may be controlled and modified by the suitable homœopathic drug. The remedies which have proved most satisfactory in infantile ophthalmia are Argent. nit., Cham., Euphras., Merc., Pulsat.; and very frequently, when constitutionally indicated, Sulphur, Calc., Lycop., Silicea. The special indications are so admirably

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given in Allen and Norton's work on *Ophthalmic Therapeutics*, that they will not be referred to here.

The question as to the use of local, caustic, or astringent treatment, demands our most careful attention. All applications of this kind were condemned in no measured terms by Hahnemann, and it has also been the opinion of many of his most conscientious followers that all such treatment is prejudicial to the future welfare of the child, and hence unscientific in its application.

The true Hahnemannian, accepting unquestioned the metastasis theory, assumes that, because the child has an ophthalmia controlled by local means, it was therefore "suppressed," and that all future morbid physical phenomena that may manifest themselves are directly traceable to this suppression; and, believing this assumption to be true, he deprives himself, from conscientious motives, of what might otherwise be a valuable auxiliary to his treatment. A difficulty is always presented in discriminating between the *post hoc* and the *propter hoc*. The same constitutional diathesis that renders the soil fertile for the implanting of a purulent ophthalmia may also render it susceptible to the development of other diseased conditions; and the fact of its having been suppressed might have nothing whatsoever to do with any future manifestations of disease. The following case is an illustration:

In April, 1876, a healthy child was born, the mother at the time suffering with a specific leucorrhœa. Purulent ophthalmia was developed of a most intense and violent character. Every care was given to the nursing, and the hygienic surroundings were of the best. With various remedies administered internally, Nitrate of silver, Sulph. of copper and Zinc, of various strengths, were used locally during the treatment. After the most severe inflammatory symptoms had been subdued the discharge still continued profuse, and it was two months before the conjunctiva had returned to a more normal state. In 1877 the child again presented with an eczema of the external auricle, which was cured by internal remedies and vaseline locally. In 1878 it again appeared with conjunctival hyperæmia; small tarsal tumors (which were removed with the knife) and an excoriating leucorrhœa. Now, is it not fully as just to attribute these

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morbid phenomena as well to the inherited dyscrasia as to the *suppressed* ophthalmia?

So much is urged, not in extenuation of habitual local treatment, because this disease can be much more readily and safely cured in almost every instance if it be taken from the beginning by internal medication; but in those cases in which it has been allowed to go on unchecked, until even a few hours may suffice to destroy the sight, it must be the physician's privilege to employ any method that he may deem best to preserve the visual integrity; and, with our varied and efficient resources, the results of treatment of this disease under homœopathic hands should be, as they are, of the most successful and gratifying nature.

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APPENDIX.

DISCUSSION.

FOURTH DAY—MORNING SESSION.

DR. WINSLOW: There is something that I wish to call attention to. One of the doctors stated that there were no symptoms about the eye to indicate the use of Arsenic. I find, according to the proving of Arsenic, that we have a burning excruciating discharge; the discharge produces the burning. I think that many symptoms may indicate Arsenic.

DR. ALLEN: I have simply one suggestion to make, and that is, the remedy which I find of very frequent and of very great value, a remedy that I am sure of; it is Lycopodium. I have used it for blepharitis marginalis. I did not acknowledge it in the text of the paper. It seems to me one of the most valuable remedies.

DR. RUNNELLS: I think that practitioners generally have more confidence in themselves in regard to the treatment of eye diseases than is proper. When they have studied this thing as a specialty, they then fully know how many difficulties may arise; then only they can know how many mistakes they have hitherto made. In the Western country general practitioners have an idea that the treatment of eye diseases does not amount to much. They are often not able to diagnosticate simple cases of catarrhal conjunctivitis, or purulent ophthalmia, or follicular ophthalmia. Now, if a general practitioner does know enough to diagnosticate his case correctly, he can readily apply to it the general indications for the remedies given here to-day. It is very common with the general practitioner when he has an eye case, to study it well, so that he will not be subject to criticism; then, after he has diagnosticated the case, he can turn to Allen and Norton's *Therapeutics*, a little work for general practitioners, intended for them, and find the correct remedy which must be given. If the case is studied well, this book will help us out of many difficulties. I find that general practitioners often do not know how to diagnosticate these simple eye cases, and until they do they ought not to pretend to treat them; they should never pretend to be specialists; they should send the cases to those who are. I find in phlyctenular disease the greatest benefit from Hepar sulphur and Graphites. From these remedies I have had very good results.

On motion, the discussion was closed.

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SECTION XI.

REPORT

OF THE

BUREAU OF GYNÆCOLOGY.

S. S. LUNGREN, M.D.,	Toledo, O.
C. ORMES, M.D.,	Jamestown, N. Y.
B. F. BETTS, M.D.,	Philadelphia, Pa.
S. R. BECKWITH, M.D.,	Cincinnati, O.
W. H. KERN, M.D.,	McKeesport, Pa.
R. LUDLAM, M.D.,	Chicago, Ill.
J. H. WOODBURY, M.D.,	Boston, Mass.
C. G. HIGBEE, M.D.,	St. Paul, Minn.
W. C. RICHARDSON, M.D.,	St. Louis, Mo.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 5.

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XV. Ovarian Diseases, ... C. Ormes, M.D.

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XIV.

ABORTION AND ITS RESULTS.

By S. R. Beckwith, M.D., Cincinnati, O.

The evils resulting from procured abortions are, in my opinion, more serious than is generally admitted. A description of some of the pathological conditions induced thereby is the purpose of this paper.

First, I will consider its effect upon the uterus: If an abortion is procured by the use of emmenagogues, or by a rupture of the fœtal membrane, or by any local means, the mucous membrane of the womb is very liable to become inflamed; this inflammation often becomes chronic, and extends into the neck and cervix, causing troublesome leucorrhœa, membranous dysmenorrhœa, and plastic or fibrinous deposits in some portion of the body of the uterus, flexing or otherwise displacing the organ, which form of displacement is exceedingly difficult to remedy.

Second, effect of abortion on the tissues surrounding the uterus: If a sound is roughly passed into the uterine cavity, or if even an attempt is made to pass it when there is flexion of the womb, during the first few months of pregnancy, pelvic cellulitis and peritonitis are frequently produced. The inflammation of these tissues is the result of an injury to the cervix, followed by inflammation which extends to the areolar and serous tissues surrounding the womb.

A lady, on whom an abortion had been produced at the second month of pregnancy, had pelvic cellulitis, which terminated in a large abscess that discharged through the rectum. In a few months she died, in consequence of extensive suppuration. Peri-

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tonitis induced by abortion runs a rapid course, and I have found it as difficult to cure as puerperal peritonitis.

Third, hæmorrhage: When severe flooding occurs from an abortion the system suffers more seriously from anæmia than from the loss of the same amount of blood from any other cause; years may elapse before the patient regains her full strength and vigor.

Fourth, septicæmia: When the womb has been injured by any mechanical means intended to produce an abortion, or when the placenta, in part or whole, has been retained a considerable time after the expulsion of the fœtus, or when coagulated blood remains for several days in the uterus, a morbid condition supervenes similar to that induced by septic poisoning following parturition or mechanical injuries.

These are some of the effects produced by abortions. The victims become pale and haggard; they suffer for a long time after the accident from defective assimilation. The mind is often harassed by a contemplation of the crime that has been committed; the disposition is altered so that, from the former loving wife and gentle mother, the patient is changed so as to have become irritable, morose, and sad, a mere wreck of her former self, and all of this is due to the destruction of her unborn offspring. If physicians will oftener speak in indignation of such a crime, and inform married women of the serious physical suffering such a calamity induces, I believe that fewer cases of procured abortion will occur.

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XV.

OVARIAN DISEASES AND THEIR COMPLICATIONS.

By C. Ormes, M.D., Jamestown, N. Y.

Formerly the ovaries were considered more subject to disease than the uterus; but the more modern specialists give greater preponderance to the latter class of affections. At the commencement of the last half century but little progress had been made in the successful treatment of ovarian diseases. An esteemed author asks: "Who flatters himself that he has removed a dropsy, resolved a scirrhus, or interrupted a suppuration in these bodies? We believe, if he be candid, none will confess he has." Again, he says: "Advances are constantly made in this branch of science, though its perfection must necessarily be remote; still from time to time, we now and then become acquainted with substances which have a specific action upon certain tissues of the human body. The time may arrive when we shall be in possession of a substance, the action of which shall be confined to the ovaries alone, or to similar organizations. But until then, unfortunately, the victims of affections of these important parts must remain content with the solace which palliations afford, for, unfortunately, they have much more frequently furnished subjects for the anatomist's knife than triumphs to the skill of the physician." The writer undoubtedly had some indistinct prophetic vision of the dawning of the era of specific medication.

Like all other organs of the body, the ovaries are liable to various forms of disease, and to become the seat of different kinds of morbid growths.

Dropsy of the ovary is the form of disease to which, above all

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others, it is most prone, consisting of a hypertrophy of the organ, from the development in it of a number of large cysts or sacs, filled with serous fluid.

It is a well-known fact, and one often exemplified in general pathology, that when any organ becomes the seat of a new disease, or morbid growth, it most readily takes on a form of development, leading to the formation of a tissue akin to the normal anatomical structure of the organ in which it has its seat. It is in accordance with this great law that we find the ovary preeminently prone to become the seat of cystic degeneration. We meet with various forms of cystic degeneration of the ovaries and their anatomical connections, and the question has often been asked, what gives rise to ovarian cysts or tumors? This has more frequent y been answered theoretically and unsatisfactorily than otherwise.

We are not in possession of any positive reason why an ovary enlarges and assumes this or that form of morbid growth, or why it should take on different forms or types of development in different cases. The disease occurs alike in the married and unmarried, and does not always prove a positive hinderance to impregnation. A Mrs. H. had been twice pregnant, and given birth to two full-grown, healthy children, although she had ovarian dropsy of nearly twenty years' standing; the youngest child was eleven years old at time of operation. The cyst weighed twenty-eight pounds. From its long standing there were many and extensive adhesions, but she made a good recovery. That the removal of an ovarian cyst is not a bar to impregnation the following cases will show: A cyst weighing thirteen pounds was removed from a young married lady; two years after she gave birth to a full-grown male child. A young unmarried lady had a cyst weighing eighteen pounds removed; she afterwards married, became pregnant, and in due time was delivered of a healthy child at full time.

The menstrual function, in the early stages, at least, is mostly carried on unaltered and unimpaired. Age has no specific influence, although most cases occur between the ages of thirty and forty, or later in life, long after menstruation has ceased. In

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other cases you will find the disease fully developed before the twenty-fifth year.

Both ovaries are sometimes simultaneously diseased.

In that case we usually find one very much larger than the other. "It is said the right ovary is somewhat more frequently affected than the left."

I know of no reason why one ovary should have the preference. Of the cases which have come under my observation, the preponderance is largely in favor of the left ovary.

The fact that both ovaries are frequently affected in the same patient is considered a strong argument for the theory that the malady may have its origin in constitutional, rather than in local causes. By some it is considered hereditary, as where two or more sisters and a daughter of one family suffer from the same disease.

In investigating the diseases of the generative organs, the first point to make is the ascertaining whether there is any functional disturbance of these organs, as this will help us to form a correct diagnosis as to the presence of any special disease. But functional derangements of the generative organs are not always present in connection with ovarian dropsy. There are cases where their functions are interfered with in various ways.

The catamenial flow may be suppressed or so changed as to be hardly recognized as a menstrual flux. It may be excessive, although this is rare, or there may be an ovarian dysmenorrhœa developed.

These deviations from the normal course of menstruation may be found in many cases of ovarian disease, but none of them are to be considered as positive evidences of such disease. In a majority of cases the menstrual function is performed quite naturally in the earlier stages, but perverted in the later stages. Although patients afflicted with ovarian dropsy are not so susceptible to pregnancy as women who are free from the disease, yet any diagnosis of ovarian dropsy founded upon alterations in the functions of menstruation, conception, or pregnancy will be a failure; for there is no disturbance of function in such constant connection with the disease as to make it of any specific value as a diagnostic sign. Neither are these *constitutional symptoms* in-

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dicative of the presence of ovarian tumors. Such patients do suffer occasionally from disease of the stomach, with nausea or vomiting, but these symptoms do not necessarily occur, and being more frequently the result of other causes, are of no practical value as signs of this form of disease.

Frequently the first indication of an enlarged ovary is derived from the mechanical pressure of the tumor on the surrounding pelvic organs.

Numbness or weariness of one of the lower extremities, from pressure on the sacral nerves; a dragging or weight in one side, from stretching of the ovarian and uterine ligaments; dysuria, from pressure on the bladder; difficult defecation, from pressure on the rectum, are all symptoms complained of, yet they may all arise from entirely different causes. Therefore they are not of positive value in diagnosing ovarian tumors.

It is impossible to be sure of the nature of these cases without calling into our aid the assistance afforded by *physical explorations.*

The presence of an ovarian tumor is frequently discovered on examining for some pelvic or uterine disease, when its influence upon other pelvic organs has induced the patient to consult her medical adviser for relief.

From mechanical pressure, while the tumor is still in the pelvic cavity, displacement of the uterus may be present, or sufficient inflammation may be induced to form adhesions to the uterus.

In making a physical diagnosis it is very essential that the uterine complications should be thoroughly understood, as on that greatly depends the success of our operations. (See case of colloid tumor, page 162.)

The bladder and uterus may be displaced and both occupy the lower part of the pelvic cavity, as was noticed in a recent case of ovarian cyst with Fallopian pregnancy; the uterus was found on the floor of the vagina with the bladder pressing down upon it, the fœtus lying curled up in the brim of the pelvis.

When the ovary first becomes enlarged it usually falls downwards and backwards into the peritoneal sac, can be readily felt, and is movable by the fingers when pressing into the posterior cul-de-sac of the vagina.

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In the medical treatment of ovarian disease it is very essential to know the true character of the morbid growth you are prescribing for. When the tumor is yet small and in the pelvic cavity, with the finger pressing the tumor in the cul-de-sac and the hand upon the abdomen, making pressure so as to firmly fix the pelvic contents, the impression imparted to the fingers of the experienced examiner gives almost unmistakable evidence of the elasticity or inelasticity of the tumor. When the tumor has left the pelvis and entered the abdomen the diagnosis is even less difficult.

The patient will often tell you the tumor came at first in one or the other side, and, as it assumed greater proportions, moved into the centre of the abdomen, as a necessity for its further development, and became as central as the gravid uterus; from this it may be distinguished, however, by its more globular form if unilocular, or uneven surfaces if multilocular. From ascites, by being globular or spherical, and protruding anteriorly, not filling out over the hips and sides of the abdomen, and when large invariably lying immediately under the abdominal walls, the bowels being in the back part of the abdomen.

A retroverted uterus has been mistaken for a small ovarian tumor in the pelvis. I was called to see the patient of a lady electrician, who was being treated for a pelvic ovarian tumor. An examination disclosed an unimpregnated retroverted uterus, enlarged so that its cavity measured four and a half inches. The supposed ovarian tumor was disposed of by replacing the uterus and retaining it *in situ*.

An enlargement of the uterus in consequence of impregnation has been mistaken for an ovarian tumor, whilst, on the other hand, ovarian cysts have been mistaken for the pregnant uterus, much to the discomfort of young or unmarried ladies.

The use of the stethoscope to ascertain the fetal heart-sounds will contribute very much to a correct diagnosis. With it we may note the number of pulsations per minute, and whether they are synchronous with the pulsations at the wrist.

When the walls of the ovarian cyst are thick and it lays firmly against the aorta, the pulsations of the abdominal aorta may be distinctly felt and heard through the abdominal parietes;

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this must not be mistaken for the pulsations of the fetal heart. The former may be distinguished from the latter by being more heavy, vibrating, and jarring; whilst the fetal sounds will be more feeble and subdued, but distinct, and not synchronous with the heart pulsations of the mother.

The simplest form of ovarian dropsy is that in which there is but one cyst (unilocular) developed in a single ovary, with a thin wall, filled with a simple, serous fluid, with few or no complications. This variety is the most desirable to be met with in practice, and is more amenable to treatment or removal than any other.

Two of my patients, with this form of cyst, became pregnant after removal, and were delivered of healthy babes at full term.

Ovarian cysts, unfortunately, like other afflictions, seldom come singly, but often present themselves in a *multilocular*, or more complicated form, being made up of many cysts of different sizes and forms and in different stages of development. We very frequently find one or two large cysts with many smaller ones in the same tumor.

I operated on one case in which the cyst weighed sixty-five pounds, and found it composed of two large cysts, with many smaller ones about it. Another case was that of a lady æt. sixty, in whom the tumor was found to consist of a multiplicity of cysts, varying in size from those that were very small to others of a capacity of two or three quarts, some of which had burst, and others contained a cream-like pus, of which there were several pints in the abdominal cavity; also a colloid tumor of right ovary, weighing five pounds. The patient was suffering from septicæmia at the time of the operation, and died six weeks after.

In the multilocular form of cysts the larger ones lay high up in the abdominal cavity, where they meet with the least resistance; being closely applied to the internal aspect of the abdominal walls, they can be readily reached by the trocar and canula, when their employment for relief is desirable.

Of the hard tumors of the ovary the *colloid tumor* is the one most frequently found in practice. It is made up of a multitude of small cysts of different sizes, filled with a semifluid matter, which does not readily escape on section. In this we have no

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breaking down of the cyst, but the whole mass goes on enlarging to a remarkable degree. The only successful treatment for these tumors is by extirpation. I removed one from a lady whose usual weight was one hundred and fifteen pounds. The tumor weighed fifty-one pounds. In diagnosing the case the only sensitive pains found were in the left iliac region, where there was soreness and pain on pressure. The os uteri could not be reached, the bladder only occupying the lower pelvic cavity. Upon raising up the tumor the uterus was found considerably distended, flattened, extensively adherent to the tumor, and could only be recognized by its anatomical structure, requiring to be dissected off from the tumor; this was the only serious obstacle to the operation, save the great shock to the nervous system.

The patient made a good reaction for the first three days and promised well. On the third day, at evening, she complained of heat in the stomach and faintness. As I was absent from town a few hours, a very nervous physician was called in, who had been present at the operation; he advised brandy in liberal doses. I returned two hours after and found my patient suffering from great internal heat, thirst, and retching; pulse 130. She obtained no relief from remedies; at midnight her mind wandered, and the next morning at nine o'clock she died.

I think Rhus tox. and cold water should have been given instead of brandy in this case.

In a former patient, who had a *carcinomatous tumor* of the ovary involving the whole of the internal organs of generation, a reaction came on, which culminated about the third day in great heat, intense thirst, and sensation of sinking. These symptoms were entirely relieved by Rhus tox. and cold water. In less than three hours the patient broke out into a perspiration, after which all the malignant symptoms speedily subsided.

These kind of tumors, the *carcinomatous*, are more rapid in development as well as more malignant than either of the others.

The only case I ever met with of this form of morbid growth was characterized by constant heat, tenderness on pressure, and a sanious discharge from the uterus, which was distended some eight inches and bled freely from any exploration by means of

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the uterine sound. There was loss of appetite, frequent nausea, and a pale straw-colored complexion. From the rapid development of this case I diagnosed a malignant tumor and advised its immediate removal, which was consented to. With the tumor I removed the whole of the internal organs of generation. The patient oscillated between life and death for a week or two, but made a good recovery and is now well.

Dermoid tumors of the ovary are of very rare occurrence, seldom attaining any considerable size or rising above the pelvis. When the cyst is tapped a yellowish, creamy fluid escapes, resembling pus, and if permitted to open such a tumor we find a quantity of hair, possibly some teeth, and bones. With this form of tumor I have had no experience. Another form, nearly as rare as the preceding, is the *cribriform tumor* of the ovary, in which the contents of the cyst resemble brain-tissue. In the development and growth of this form of tumor we find no special diagnostic symptoms differing from the more common form of ovarian growths; I have met with but one case, a lady, 63 years old, the tumor weighing twenty-five pounds. The development of constitutional symptoms, and the apparent degenerative change in its structure renders it next in malignancy to the carcinomatous tumor of the ovary.

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SECTION XII.

REPORT

OF THE

BUREAU OF PÆDOLOGY.

L. E. OBER, M.D.,	La Crosse, Wis.
W. H. JENNEY, M.D.,	Kansas City, Mo.
S. P. HEDGES, M.D.,	Chicago.
H. C. ALLEN, M.D.,	Detroit.
R. B. HOUSE, M.D.,	Tecumseh, Mich.
F. L. DAVIS, M.D.,	Evansville, Ind.
SOPHIA PENFIELD, M.D.,	Danbury, Conn.
MARY A. B. WOODS, M.D.,	Erie, Pa.
T. C. DUNCAN, M.D.,	Chicago.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 5.

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XXI.

THE SYMPTOMS AND TREATMENT OF CAPILLARY BRONCHITIS.

By S. P. Hedges, M.D., Chicago, Ill.

Capillary bronchitis is a catarrhal inflammation of the minute and minutest ramifications of the bronchial tubes. It may occur as a primary manifestation, coming on suddenly during perfect health, or it may occur as an extension of an existing catarrh of the nasal, pharyngeal, or laryngeal mucous membranes. Again, it is sometimes secondary to exanthemata, or to whooping-cough, or follows diphtheria and other diseases. I have observed in Chicago and the lake region, that a catarrhal affection of the minutest bronchial tubes in the great majority of cases supervenes upon and occurs as an extension of the milder forms of nasal catarrh, and with patients who are subject to frequent "colds." Also, that the sudden and strictly primary cases,—the idiopathic cases,—are those that are so likely to extend deeper, and almost from the start invade the pulmonary parenchyma at distinct points, and so pass beyond the boundaries of capillary bronchitis into that of lobular pneumonia, or broncho-pneumonia. The more sudden and severe the onset, the more certain to become pneumonitic. Any case of capillary bronchitis, it is true, may become during its progress one of lobular pneumonia. The observing physician, however, is never deceived.

There are plain and distinct symptoms which clearly differentiate the two conditions. It is true, some of the writers have stated that the diagnosis of capillary bronchitis is very difficult, and have confused themselves and their readers in trying to describe both these diseases under one name. Happily, however,

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the latest authors are more exact and helpful in this really difficult matter.

The differential diagnosis of capillary bronchitis from lobular pneumonia is given by another member of this bureau, yet it will be necessary at times to point out in the course of the symptoms, where one ceases and the other begins. However, it must not be understood that the two never occur at the same time, as it is quite possible for both conditions to be present, simultaneously, in the same patient.

Capillary bronchitis is strictly a disease of childhood, most of the cases occurring in children under three years. I have never had a case in a child over six years of age. Very feeble children older than this may have it. It also occurs in the aged, in the *second* childhood, as it were. The younger and feebler the child, the greater is the danger. Let us take a rapid look at a characteristic case of capillary bronchitis, a sort of symptomatic inventory, and then return and more carefully consider the more important symptoms in detail, and what we may learn from them.

As is usual, the child has had, for a longer or shorter time, a catarrhal cold, when it is noticed to become more restless, and somewhat feverish, as night approaches. The breathing is accelerated, the cough is frequent, short, dry, spasmodic, and painful. The little patient cannot rest; wishes to be taken up, then put in bed again; the pulse is rapid and weak; the eyes are suffused and injected; the tongue is dry; the skin dry and hot. There is great thirst, yet the patient only swallows once or twice, when the cough interferes; there is great anxiety of countenance; there is much impatience; the child throws itself about; it cries, is distressed, and continually aggravates its own condition. Often it does not want to be disturbed *by others*, and yet cannot lie still itself. There is great desire for rest and sleep, yet nothing is able to give it. If a nursling, it wants to nurse, but can only begin, when the cough interferes. It is usually in this condition when the physician is called. If the inflammatory process continues to increase, the cough becomes more severe. In older children there is some expectoration, more as a retching at the close of the severest paroxysms of coughing. This is foamy, stringy or ropy, tenacious and whitish-gray in color. As the case progresses, the breathing

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becomes more quick, labored, and wheezing; there is difficulty, both with the inspiration and expiration. Attacks of suffocative dyspnœa occur. The respirations are increased to 40 and 60 per minute. The accessory muscles of respiration are all called into action. There is increased motion of the alæ nasi, with dilatation. There is retraction of the epigastrium and hypochondriac regions, as well as increased prominence in the supra and infra clavicular regions. Percussion affords negative results. Auscultation gives clear and convincing evidence of the real trouble. Early there is heard an increased and roughened respiratory murmur, though this is sometimes muffled and indistinct. The more feeble and indistinct it is the more critical the condition. Later, and of greater significance, are the numerous râles which are heard. In the diffused form, the râles are heard nearly all over the lung area. They are earlier, and more clearly noticed over the posterior and lower surfaces. The temperature is medium, averaging about 102° to 103° F. even in the severest cases, and often never reaching 102°.

As the case progresses all these symptoms increase. The respirations increase, even to 70 and 80 per minute. The wheezing respirations become trembling and rattling. All sorts of râles are heard. There are significant irregularities observed in the breathing. The pulse rises to 140, to 180, and grows weak, wiry, and fluttering. The child becomes more quiet, even comatose. The coughing is less frequent, but there are frightful attacks of dyspnœa, in each one of which the end seems near. This increased difficulty of breathing is not attended by increased fever. There is a steadily increasing cyanosis. The skin becomes clammy and blue, with cold sweat. A bluish, sickly paleness spreads over the child's countenance. The blue carbonated blood settles under the finger nails, and finally, during an attack of dyspnœa, often with convulsions, or, in a deeper and deeper coma, with gradually increasing suffocation, the little patient gives up the struggle, and the quiet and stillness of death closes the painful scene.

These cases, when very severe, run their course in a day or two. At other times they last from a week to ten or fourteen days, with periods of apparent improvement, which are cruelly

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deceiving, seeming to be only *rests* from exhaustion, while the real trouble is slowly and certainly gaining ground.

Not every case of capillary bronchitis has all of these symptoms, and at any stage of the disease the symptoms may ameliorate, a curative action be attained, and the patient recover. Fatal cases follow in the main the course above delineated.

Let us now recapitulate and note some of the most important symptoms, and see what they teach us.

And first, as to the

1. *Temperature.*—In mild cases the clinical thermometer only records a slight increase above the usual temperature, say 100° to 101°. In the severe cases rarely is 103° reached in the pure diffuse form of capillary bronchitis.

When in the course of a capillary bronchitis the temperature is observed to record 104°, the inflammatory process has, in all probability, invaded the parenchyma at certain parts of the lung.

These pneumonic foci can, if not too deeply seated, be discerned by auscultation, and even by percussion when lobar. This is the most important feature of these cases, to be learned by closely observing the range of the thermometer.

So long as the record is 103° and below, there is no broncho-pneumonia.

2. *Percussion.*—We said above that percussion gave negative results. In pure cases of capillary bronchitis this is always true. There is no departure from normal sound. But when broncho-pneumonia, or atelectasis, or tuberculosis, or alveolar thickening, or emphysema occurs, the strict attention to percussion-sounds will early reveal the changes occurring.

Percussion in the early stages will be easily borne by the little patient in capillary bronchitis, whereas it gives great pain if there is any pneumonia, either lobar or lobular. Here we have a good mark, and when we most need it, to differentiate this disease from pneumonia.

3. *Auscultation* gives the most important testimony to be gained from physical exploration.

I have already spoken briefly regarding this. A rapid increase of pneumonic foci often obscures the numerous râles, and the observance of this, when emphasized by dulness on percus-

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sion and increased temperature, shows the rapid extension of the inflammation into the air-cells. In pure bronchitis auscultation shows, first, increased respiratory murmur; sometimes there is feeble respiratory murmur; then fine, dry crepitating râles, or sibilant; then moderate-sized, bubbling râles; and lastly, large, bubbling, wheezing râles, or a mixture of various râles.

The increase in the amount and viscidity of the mucus in these different stages accounts for all these changing sounds.

4. *Type of Breathing.*—Dyspnœa is a marked symptom in severe forms of capillary bronchitis. The greater it is, and the *earlier* its manifestation, the more severe the case. There are periods of relief, intermissions, when the breathing is better, easier, and less rapid. This, again, is followed by exacerbations. These are most probably caused by plugs of mucus stopping up some medium-sized tube so as to obstruct the passage of air to larger or smaller tracts of lung area. Both expiration and inspiration are usually impeded. Not only is the *entrance* of the air to these obstructed portions of lung impeded, but the plug of mucus, acting as a valve, permits the gradual exhaustion of what air is in the part of the lung, and so finally a localized collapse occurs at this place,—a kind of atelectasis. The degree of abnormal breathing is *typical* of the *prognosis*. *Cyanosis*, when early occurring, is of *bad* significance.

5. *Cough.*—There is always cough. Its frequency and character is variable. No special feature of it is so fully marked as to be of real diagnostic value. In nurslings, and under five years, it is nearly always spasmodic.

6. *Sputa.*—There is no expectoration in children under five years, as a rule. The sputum is swallowed. When there is expectoration it is a stringy viscid mucus. If the case is verging towards a pneumonia the sputum is blood-streaked or rusty. This is the light that is given by this observation. At times the sputa are membranous. Casts of the minute and minutest tubes are coughed up. The observance of the exact kinds of sputa is a great help in the selection of the remedy, as well as in aid to the diagnosis.

7. *Pulse.*—The strict observance of the pulse is important. In no disease is it more so. The great rapidity of the pulse with

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a low temperature is diagnostic. It always increases in proportion to the increase of the inflammation. One of the earliest indications of improvement is a steady lowering of the cardiac action. The pulse is often so fast we are unable to count it. When it is weak and irregular, as well as very rapid, the case is critical; still more so, the weaker and younger the child.

There is one important aid to the diagnosis of the advanced condition of this disease, and that is in regard to the action of the accessory muscles of respiration, together with the appearance of the thorax. The parts of the lung which first suffer in this form of bronchitis are those the most remote from what might be called the centre or the point of departure of the current of inspiration, *i. e.*, the roots or bases of the lungs. The parts so likely to suffer from collapse or œdema, or mucous engorgement, are the lower and posterior portions.

Now, it is well known that the lower border of the thorax is distended with each inspiration, and retracted at each expiration. If we notice that this has ceased to occur at all, then we conclude that the lower lobes, or the lowest parts of them, are not visited by the air at all. This condition of the epigastrium and hypochondrium is important to be noted. It has also been observed that, in capillary bronchitis, when the condition of collapse is imminent, and as a *pre-existing* condition always, and when the respiration is greatly and dangerously strained, that the supra and infra clavicular regions are prominent and greatly *bulged out.* This also reveals great obstruction to the respiratory movements, and, taken in connection with labored action of all the accessory muscles, should not fail to be observed by the thorough physician. He who is able to make an early and accurate prognosis will be sure to gain much for his reputation in his fatal cases.

Treatment.—Each case of capillary bronchitis, while following in the main the above description, will of course have its own individual symptoms. This is true of each case, of whatever disease. It is on this account that the true and successful physician must individualize his treatment of disease. The books give a systematic account of a disease—its course, divisions, varieties, complications, etc.—and then a list of remedies to be given for the different conditions and stages. This is well

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enough for the *textbooks*, well enough for the first reading of the student, simply as an introduction to his work, to give him insight to the management and treatment of disease. As the homœopathic physician comes into the harness he must soon go beyond this if he would succeed. Strict individualization of each case, and no routine, should be his motto. Now, this paper is such a study of this disease. Before one can prescribe, another study—another individualization—this time of a remedy—must be made, or must *have been* made, and then when one picture has been found to correspond with the natural one of the disease, the morbid one, *then*, and only then, is the similimum found. I premise this much on this subject in part as an explanation of the course I shall follow. There are enough textbooks where "cut and dried" prescriptions for the several diseases are at hand. In this Institute I believe we should, in our papers, and especially in those which relate to treatment, give our individual experience. In the course of a considerable practice among children in the lake region, at Chicago, in the treatment of this disease, I have found most frequently indicated the following remedies, viz., Aconite, Bell., Bry., Caust., Ipecac., Merc. viv., or Iod., Tart. emet., Nux vom., Phos. Many other remedies are given. I do not wish to be understood as limiting myself to these remedies only. It is as true here as elsewhere, that any proven remedy may be called for in any disease.

The general voice of the profession is alike as to the action of *one* medicine as the initial remedy in capillary bronchitis; that remedy is *Aconite.*

In the initiative and congestive stages, and well on into the inflammatory stage proper, it is still the grand similimum. I will go so far as to say that, in my hands, it is very often the only remedy required throughout the whole case, on account of its promptly curative action. It is especially indicated for the intense restlessness; the child cannot keep still, wishes constant change; the fitful impatience, even violent perversity, going contrary to everything done for it. Then the hot skin; fever; short, dry, distressing, frequent cough; the rapid, oppressed respirations; dyspnœa; thirst; all the symptoms are particularly aggravated *at night.*

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When you notice these symptoms, and many more, you will readily call it to mind, and above all when you remember that here is just the field in which Aconite has won such triumphs as to make it a very corner-stone of homœopathy, you will agree with me that it is alone sufficient to cure many of the cases of this dangerous disease.

But if Aconite fails to ameliorate the symptoms, and the brilliant, sparkling eyes, jerking muscles, cough more paroxysmal, and bloated face, throbbing arteries, increased fever and pulse, early, talkative delirium, all indicative of cerebral congestion, Bell. 3^{x} to 6^{x} will be called for, alone following Aconite, or alternately with it. Should there appear, in the course of the case, periods of intermission, when there is an amelioration of the symptoms, but attended by slight chilling, with rapidly following fever, thirst, cough very dry, short, and hacking, and more painful on full inspiration, soreness on percussion, likely for the last time, these indications of a remittent character call for *Bry.* I have generally used, in the acute cases, the 3d dil.

I always expect, where this is well indicated, it will not only relieve but remove these symptoms. Should it not, however, and while the fever and pain and soreness in chest are no more, yet the cough is more distressing, preventing all sleep,—more at night,—and after getting a little better returns soon as bad or worse than before, and making the child cry, so it tries to keep down the cough, breathing shorter and more jerky, and if joined with these symptoms, there appears a little dulness on auscultation, general or lobular, I should prescribe Phos. 6th to 12th.

With these four remedies, common as they are, I cure more than nine-tenths of my cases. This is what you want,—my experience; trite and old as it is, I tell you it nearly always does curative work.

There are cases, however, when, from one cause or another, in each case to be discovered by the physician, the child still continues to grow worse. Some pass over into lobar or lobular pneumonia, but others continue bronchial, and great quantities of mucus fill the tubes. This continues until the tubes are plugged, collapse is threatened, cerebral congestion and hyperæmia occur. There is coma and cyanosis, weak, intermittent pulse.

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Here Arsen., Carbo. veg., Tart. emet., and Phos. are to be studied. I wish to note, in passing, that in a few such dangerous conditions I have had marked curative action in connection with the use of Tart. emet. 2^{x} in water, four to six doses, once in twenty to thirty minutes, followed by Bell. 1^{x} dil., ten drops in ten teaspoonfuls of water, a teaspoonful at a dose ; also every twenty to thirty minutes, for four to six doses, followed by Tart. emet. as before.

In these cases I would observe that Bell. and Tart. emet. had been used in higher attenuations with only indifferent results. Being indicated so strongly I resorted to the lowest dilutions and with fine results. For the cough, which remains so obstinately after the other symptoms have gone, I find, in addition to the above remedies, good results from Lach. 30°, Carbo. veg., 30° or 100°, Ipecac., low and high, Nux°, Spongia, and Hepar sulph. At this stage we require the most careful selections. If this is done success is sure to follow.

In regard to the use of adjunct treatment, in connection with our specific selection of remedies, I have found, in the severe and obstinate cases, great benefit from the local use of hot fomentations to the chest, both front and back, to be well covered with dry flannel. I use hot, wet cloths, or ground flaxseed poultices, changed often. Sometimes I have oiled the chest with olive oil, and laid over dry, hot, raw cotton, well covered and secured, as all such appliances, wet or dry, should be, by roller or well-fitting jacket.

The principal hygienic treatment is the preventive treatment. Of course wholesome feeding and proper nutrition should be secured; also pure air, pure milk, pure water, good sewerage, good ventilation, kept from damp and night air, especially the latter. But mainly it is narrowed to this one thing, viz., provide suitable clothing, which is warm and made to cover the arms, legs, and neck. Clothe the little ones thus, as they should be, and *keep* them clothed *all* the time, and there will be fewer cases of capillary bronchitis.

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XXII.

LOBAR PNEUMONIA.

By Sophia Penfield, M.D., Danbury, Conn.

Lobar or croupous pneumonia is an inflammation of the pulmonary air-cells, with a fibrinous exudation from their capillaries upon their free surfaces.

Pathology.—Twenty years ago inflammation of the lungs was classified as acute and chronic. The former was divided into lobular or infantile, and lobar or adult, the distinction between the two being one of quantity rather than quality. The lobular variety attacked isolated lobules, while sound lung substance intervened, and it found its victims among children under six years of age, while the lobar or common pneumonia occurred among those from six years and upward, and invaded one lobe, one lung, or both lungs. If both lungs were attacked it was a case of double pneumonia. At this time there were doubts among some authors as to the existence of a chronic variety of pneumonia. Under both forms the disease was an "inflammation of the spongy tissues of the lung," while occasionally the cellular tissues between the air-cells was the seat of attack. The fibrinous exudation was acknowledged to be present or absent at times under either form. Ten years later the term lobular pneumonia was applied exclusively to an extension of inflammation into the air-cells from capillary bronchitis. It was either catarrhal or croupous, and occurred at any age. Lobar pneumonia was idiopathic or croupous, and secondary or catarrhal. It attacked infancy, childhood, or adult life, but increased in frequency as the years advanced. At the present date the two varieties are classified as lobular or catarrhal, and lobar or croup-

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ous, pneumonia. Either form occurs at any age. Young children are more susceptible to the former, and adults to the latter. The bureau limits this paper to the characteristics of lobar pneumonia among older children.

Cause.—It prevails most extensively in a cold, damp atmosphere, during sudden changes of weather and in seasons of long-continued extreme cold. In such seasons it appears like an epidemic. It is occasionally of traumatic origin. Its most susceptible subjects are those already enfeebled by disease, children poorly nourished, or of tuberculous inheritance.

Morbid Anatomy.—The lower or middle lobe is usually the point first attacked by the disease, from whence it extends upward. One lobe, one lung, or both lungs, may be involved if the latter it is double pneumonia, if the former, single. The anatomical appearance of the lungs varies with the several stages.

In the *first* or hyperæmic stage the tissues are dark red, heavy, firm, yet easily torn, pit upon pressure, and when cut are filled with dark-red liquid. They float in water.

In the *second* stage the cells, when cut through, are seen to be filled with dark-red coagulated lymph, extending into the air-tubes. These exudations of fibrin are firmly attached to the mucous membrane of each cell, and give the whole lobe or lung a solid appearance, like liver; hence the name red hepatization. It is easily torn, and sinks in water. Occasionally in this stage it has a gray and black mottled appearance; later in this stage the redness fades out, there is a rapid formation of new cells, which, with the fibrin, undergoes degeneration, and both are eliminated from the lungs by expectoration and absorption.

In the *third* stage the cut surface presents a grayish-yellowish appearance, filled with yellowish-gray liquid. It has a mottled look, is solid, easily torn, and sinks in water. Sometimes an abscess is seen, rarer still it has a gangrenous appearance.

Symptoms.—The disease is ushered in with a violent chill, of long or short duration, or with a convulsion. The temperature often rises during the chill, or soon after, to 105°F., though the patient feels no warmth. The pulse runs up from 120 to 150 or more. The face is flushed, or one cheek flushed and the other pale; the flushed cheek corresponds to the diseased side. There

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is general weariness of the body, pains in the back, and aching of the limbs. Sometimes the fever precedes the local symptoms by a day or two; at others they appear simultaneously. During the teething process, when there is inflammation of the intestinal canal, the lungs often are gradually and insidiously attacked without these premonitory symptoms. The patient becomes drowsy, and cries if moved, or there is restlessness and delirium in children of nervous temperament. Respiration is greatly increased, doubled or trebled, the alæ nasi are dilated with each inspiration, or the child breathes through the mouth, which causes great dryness of its interior. Hydroa appear upon the lips. There is loss of appetite, usually with great thirst; tongue coated white or yellowish; sleeplessness or troubled dreams; dry skin; cold extremities; constipation, and scanty, high-colored urine. The cough at first is short and dry, and the child cries at each attempt, if the bronchi are also involved. If the pleura is affected there are prolonged attacks of screaming when coughing, moving, or during unusually deep breathing. The slight sputa is rust-colored, though children will seldom expectorate it. There is dyspnœa and superficial breathing.

"The shortness of breath is due to exudation into the air-cells excluding the air, to the pain deep breathing causes, to collateral œdema in the healthy lung with diminished capacity, and to the increased need of oxygen from the rapid combustion of air during the fever." (Niemeyer.)

The fever and temperature reach their height at evening, fall during the night to a degree above that of the preceding night, and gradually increase each day until the crisis approaches.

These symptoms increase until the fifth or seventh day, which is usually the height of the attack. The crisis sometimes occurs sooner, often later, but when it is reached there is a rapid change. If for the better, there is a sudden decrease of all the violent symptoms in a few hours. The pulse lowers rapidly, temperature decreases, dyspnœa disappears, and sleep reappears. The appetite improves.

If the patient coughs out the sputa it will be observed that traces of blood have disappeared from it, and it has become yellow and frothy, or, if the sputa is swallowed, traces of it will be

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seen in the more frequent and slimy stools. The urine is lighter colored, and more frequent. The whole process occupies from two to four weeks; from three to six days for the first stage, from five to eight for the second, and from seven to fourteen for the third. A fatal termination of the disease is rare in the first stage, more frequent in the stage of hepatization. In either case it is caused by insufficient respiration, from hyperæmia of the lungs, and collateral œdema (Niemeyer), with cyanotic symptoms.

A more common cause, in the second stage, is from exhaustion, especially in pneumonias occurring in patients already weakened by other diseases.

If the disease advances to the third stage, and resolution fails to set in, respiration becomes more difficult and irregular; the cough ceases, or is less frequent; the child speaks seldom and with feeble voice; the face is pallid; there is a cold sweat on the head; the pulse is feeble and too rapid to be counted; the child is restless, half conscious, or drowsy, and the scene closes with convulsions, coma, or from exhaustion. At times, during this stage, there is a less rapid decline, with continuance of fever, daily exacerbations, and nightsweats. The skin is dry and hot; there is a pinched look about the nose, sunken cheeks, irritable temper, and variable appetite. The tongue is red and dry, or chapped, with aphthous ulcers upon its tip. The cough is loose, with rattling of mucus in the bronchi; there is emaciation, diarrhœa, all the well-known symptoms of phthisis.

Physical Signs in the First Stage.—*Inspection* reveals less movement of the diseased side. If the lungs are deeply involved the breathing is from the upper portion of the chest.

Percussion gives dulness, if the lobes near the thoracic walls are involved; if not, there is no change.

Auscultation.—In the early part of the first stage the respiratory murmur is diminished over the diseased portion, and increased over the healthy portion, on account of the latter doing the work of both lungs. While exudation is taking place the "inspiratory sound is accompanied by the crepitant râle" (Loomis), which is characteristic of the disease. "Rarely there are dry and moist râles, from the accompanying bronchitis, or a friction-sound from secondary pleurisy." (Clapp.)

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PHYSICAL SIGNS IN THE SECOND STAGE.—*Hepatization.*—*Inspection* reveals respiratory movements, lessened on the diseased side, and increased upon the other.

Vocal fremitus is usually increased.

Percussion gives increased *dulness* over the diseased portion, if in contact with the *walls* of the chest, and increased *resonance* over the healthy portion. In some cases there is a tympanitic sound conveyed through the solid lung from the air in the bronchi.

Auscultation.—Bronchial respiration is heard; also, bronchophony and pectoriloquy. Crepitant râles cease.

PHYSICAL SIGNS IN THE THIRD STAGE.—If resolution takes place, there is a gradual return to the normal sounds.

Inspection gives gradual return of natural movement of chest.

Percussion gives less dulness.

Auscultation.—Bronchial breathing is replaced by bronchovesicular. Subcrepitant and crepitant râles reappear. The increased vocal fremitus and resonance disappear.

Purulent Infiltration.—*Percussion* gives increased dulness.

Auscultation reveals bronchial respiration. Fine and coarse râles. Bronchophony and pectoriloquy diminished.

Differential Diagnosis.—The diseases with which lobar pneumonia is most liable to be confounded are pleurisy, lobular pneumonia, and capillary bronchitis.

Pleurisy is rare in early childhood, but when complicated with pneumonia, or occurring idiopathically, it is ushered in by violent, long-continued screamings. If it is idiopathic, the brain symptoms are more marked; it is often ushered in with vomiting, and never with one chill. There is greater restlessness and acute pain in breathing; sometimes the friction-sound is heard. "Bronchial breathing is attended with diminished resonance, instead of dulness on percussion, as in pneumonia." (West.) If there is expectoration, it is catarrhal or mucous, streaked with blood, instead of rust-colored and fibrinous. The disease runs no regular course, with a sudden termination. If effusion into the pleura takes place there is dilatation of the thorax, with displacement of organs and dulness on percussion.

Lobular or catarrhal pneumonia is an extension of capillary

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bronchitis, and has the same general symptoms. Collapse of the lungs is also an outgrowth of capillary bronchitis, and the differential diagnosis of these can be classed under one head. They are unlike lobar pneumonia in that they are slow in developing. They usually appear in the form of an influenza, with a series of chilly sensations, instead of one chill. The fever and temperature are not greatly increased at the outset. There is soreness under the sternum, with crying when coughing. Cough loose, with rattling in bronchi, especially after sleeping or long-continued paroxysms of fatiguing cough, relieved when mucus is raised. There is no bronchial breathing; only the fine and coarse râles are heard. There is no dulness on percussion.

There is no crisis in the disease. It appears and disappears gradually.

Phthisis is diagnosed from pneumonia by its gradual onset, by its lack of crepitation, by its sputa, and by the rareness of its occurrence among children.

Prognosis.—In single uncomplicated lobar pneumonia, occurring among children previously healthy, the prognosis is favorable. In double pneumonia, which Hartshorne says "occurs once in every eight cases," there is a fair percentage of recoveries. If the disease extends into the third stage the danger increases. If the fever runs high and long there is danger from exhaustion.

Treatment.—Nourishment should be strong and often administered. Milk, beef-juice, mutton-broth, juicy fruits, cold water or bits of ice, to satisfy thirst. The less food the patient takes at a time the more frequently and regularly must it be given. The air of the sick-room should be kept pure, that the overworked lungs may perform no unnecessary labor. When the dyspnœa is great, during the hyperæmic stage, a hot poultice of slippery elm, or other light substance, applied over the chest, gives great relief.

It can be easily removed, does not saturate the patient's clothes, or require so frequent changing as a compress.

The remedies most frequently indicated are:

First Stage.—(1.) Acon., Bel., Iod., Kali bichrom., and Verat. vir.

(2.) Arn., Cact. g., Ferr. phos., Lachnant., and Ranun. bulb. (Silicea).

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If complicated with lobular pneumonia or pleurisy, Bry., Puls.

If with brain symptoms, there are indicated, Bell., Gels., Hyos., Op., Cann., Glon.

If with hepatic symptoms, Chel.

Second Stage.—(1.) Brom., Lycop., Samb., Sil., Spong., and Sulph.

(2.) Kali iod., Mosch., Myrt. c., Nat. sulph., and Sang.

If complicated with lobular pneumonia, Merc., Phos., Spong., Tart. emet., Cup., Nux v.

Third Stage.—(1.) Ars., Carb. veg., Chin., Lach., Rhus tox., Verat. alb.

(2.) Hep. sulph., Kreos., Sang.

Rhus is often beneficial in this stage, when complicated with catarrhal pneumonia.

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XXIII.

CATARRHAL PNEUMONIA.

By W. H. Jenney, M.D., Kansas City, Mo.

Every remedy that has been proven in the homœopathic Materia Medica is but the reflection of the disease which it is intended to cure.

Pathology is to the pathogenesis of the remedy what the photograph is to the image. Disease is in its very nature occult, and at times so obscure that to get at its diagnosis we must wait for the case to advance until a sufficient number of symptoms have developed to make out its proper nature. Then we can give a scientific diagnosis. The homœopathist need not necessarily wait for the case to develop but can commence his treatment at once, and by the time a physician of another school could make his diagnosis we have our cases so far removed from danger that the diagnosis is of small importance. How often is it that in treating a case somewhat obscure in its diagnosis we go to our Materia Medica and compare one group of symptoms after another until suddenly we strike upon some characteristic symptom in the pathogenesis of a remedy which, followed in all its details, will lead us to the pathology of the disease that we are vainly trying to trace out. Then can we follow up our case with a certain diagnosis that otherwise might have remained obscure to the end of its treatment.

In studying the diseases of children there are obstacles in our way to diagnosis which are almost insurmountable, particularly is it so with infants.

In the adult we can question and examine from Alpha to Omega, but with the child our questions bring no responses;

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then we try physical examination, but here fail on account of the timidity or irritability of the patient, and we are thrown back upon our clinical experience. Of all the diseases of children pneumonia is one of the most difficult to diagnose on account of not being able to keep the children in a state of rest long enough to follow up our examination sufficient to base a diagnosis upon. Hence we should employ all that science has given us to make our case clear and its treatment successful.

Catarrhal pneumonia is divided into acute and subacute. The latter form is one of the most insidious diseases known to infancy, and the one most likely to lead the physician astray, as in general it depends upon other forms of disease or weaknesses for its development, and may have progressed to an almost hopeless condition before being recognized. The conditions which may lead to its development are: 1st, those forms of disease which are protracted in their nature, such as colico-enteritis, cholera infantum, the exanthematic diseases, etc.; 2d, an unstable or non-nutritious diet or bad assimilation, which reduces the vitality of the patient and conduces to passive congestion. Infants of this class lie a long time upon their backs, the circulation of the blood through the lungs is slow, and the respiration being feeble the remote lobes of the lungs become collapsed, the blood settles in the posterior lobes and a passive congestion ensues. The lobules of the lungs become filled up with serous infiltration (but never containing any fibrin), the alveoli of the lungs become filled with epithelial cells until the lung-tissue is swollen and dense. A section of the lung placed under the microscope reveals these epithelial cells in the alveoli of the lung.

This disease is circumscribed, and does not, like croupous pneumonia, extend to the whole lobe of the lung, but attacks different lobules, leaving healthy and diseased lung-tissue interspersed. It may be so circumscribed as to run its course and cover a space no larger than the point of the finger. This is the usual form of pneumonia under the age of five years. Although this disease may appear simple from the small extent it occupies, it oftentimes is very difficult to treat, owing to its following as a

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sequela to other diseases; again, the phlegm forms large plugs and blocks up the bronchia, causing asphyxia.

The acute form of catarrhal pneumonia is not so common as the subacute, but more extended and very dangerous in its onset; if arising from a sudden chill, the whole lung seems to become congested, and unless the disease is soon arrested it is very fatal. The same stages follow in this as in the other forms of pneumonia, viz., congestion, red, and gray hepatization. Yet the disease may progress for weeks, and the gray stage of hepatization not make its appearance. Although it is not in my province to speak of its treatment, my experience of seventeen years may add something to confirm us in our faith.

I have found Acon., Baptisia, Gelseminum, and Verat. vir. all good in the congestive stage of the disease, and either one or the other of them in conjunction with Bell., Bry., Phos., Tart. emet., Chelidonium, or Sanguinaria in the red hepatization; Phos., Ars., and Carbo veg. when the disease was very protracted and in the gray stage of hepatization; Hepar and Sulph. have also been very important remedies, and many more might be mentioned. But in cases of this kind, where symptoms are hard to get at, it is best to rely upon a few remedies that we know are certain than to go in quest of new ones. As to the prognosis under homœopathic treatment our results are the most favorable of any practice yet known, and very generally successful.

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XXIV.

INFANT DIET.

By Mary A. B. Woods, M.D., Erie, Pa.

All must acknowledge the practical difficulties which surround infant medication. The uncertainty of diagnosis is followed by aggravated drug action; hence, if the prevention of disease be anywhere wise, it is doubly so in the delicate organization of the human infant. A proper dietetic system is the most powerful means of preserving health; nevertheless, aside from propounding unused theories, this subject is systematically neglected. A consideration of our topic easily divides it into two points: First, nursing, where the natural human milk is used; second, feeding, where some of the various artificial foods are given. The well-known deleterious influence exercised by the mother's milk under some constitutional conditions should be carefully watched; and, from the first, if found, the milk should be at once discarded. Regularity in nursing is one of the greatest practical principles in infant diet. The twenty-four hours should be divided into periods of from four to six hours long through the night, and from two to three hours long through the day. At these times the child should be nursed, but between the intervals nursing or feeding should be *strictly* forbidden. The only exception to the principle of regularity which it is wise under any circumstance to tolerate, is a slight increase in the frequency of feeding to children of premature birth. Few things are more pernicious than to use the child as a breast-pump. Great care should be taken to draw off the superfluous milk before the child is allowed to nurse.

Of course the larger ducts are occupied by the oldest milk when the breasts are full. Freshly secreted milk is richer than

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that which is old; therefore, by the means indicated above, the best nourishment is presented fresh to the child. There might be room for an exception to the above in cases where the stomach of the infant acts unfavorably under the ingestion of very rich milk, when a contrary practice would be better.

Next we have the subject of artificial foods. These are of two classes: those of natural origin, but artificially used, and those manufactured by a scientific process from various nutritive substances. Cow's milk can sometimes be used to advantage, and perhaps should be tried first, wherever artificial substitution must be made. There is a prejudice in favor of using the milk from one cow alone, but its value is uncertain.

Then we have condensed milk, which is certainly very palatable and readily taken, and is becoming widely used. Experience with pure goats' milk is limited in this country, but there is much favorable testimony.

Of manufactured foods there are many. That called Ridge's has never given me reason to condemn it, and I have used no other. Ridge's will probably do if any manufactured food is available. I prepare this food with cream and water, instead of the prescribed milk, and add to it a small quantity of sugar and salt. The sweetness produced should not exceed that of the mother's milk. A very good domestic food may be prepared from boiled and strained oatmeal, with a modicum of salt, sugar, and cream added thereto.

If regularity be important in nursing it is infinitely more so in artificial feeding. Food should never be used as an anodyne to quiet fretfulness, however troublesome. Let us consider now the derangements that are sure to expiate the neglect of prudential principles. Acid stomach, nausea, and vomiting are almost certain results of persistent irregularity and prodigal excess. Constipation and gastro-intestinal catarrh, alternating and remittent, may be looked for soon after. Dentition, during which the bowels are apt to be in a bad state, is made severer in all the symptoms by neglect, bad selection, or bad management. Nervousness and restlessness are primarily produced by injudiciousness of diet.

Cholera infantum is almost solely the legitimate result of bad

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courses, of which irregular promiscuousness is the chief. It has been said that a child will do as well to be fed whenever it cries as under any other system. Unless the digestive process be wholly denied to the human infant it would be difficult to see what physiological argument could be made for such a claim. This is no truism for everybody to repeat and nobody to believe; it is of practical importance. I have attended five hundred children in which I could govern the diet, either from birth or soon after, through the most critical age, and in no instance did cholera infantum occur under such circumstances. In conclusion let me say, do not make the hasty mistake of underestimating the practice of these simple rules. They may strike some as trifling, as unscientific, as unworthy learned attention; but those medical principles are the most valuable which are at once simple in aim and based upon careful observation.

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SECTION XIII.

REPORT

OF THE

BUREAU OF GENERAL SANITARY SCIENCE, CLIMATOLOGY, AND HYGIENE.

BUSHROD W. JAMES, M.D., ... Philadelphia.
A. R. WRIGHT, M.D., ... Buffalo, N. Y.
THOMAS MOORE, M.D., ... Philadelphia.
D. H. BECKWITH, M.D., ... Cleveland.
W. H. LEONARD, M.D., ... Minneapolis.
E. A. MURPHEY, M.D., ... New Orleans.
E. U. JONES, M.D., ... Taunton, Mass.
L. D. MORSE, M.D., ... Memphis, Tenn.
JAMES L. SELFRIDGE, M.D., ... Oakland, Cal.
CORRESTA T. CANFIELD, M.D., ... Titusville, Pa.
F. F. DE DERKEY, M.D., ... Mobile, Ala.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER IV.

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XIII.

UTILITY OF BOARDS OF HEALTH.

By T. S. Verdi, M.D. Washington, D. C.

When we consider the short time that sanitary science has been recognized in this country, it is not surprising that physicians know so little of the utility of Boards of Health. Twenty-four years ago I attended lectures in Philadelphia, at the Homœopathic and Jefferson Medical Colleges and Pennsylvania University, and took diplomas from the allopathic and homœopathic schools. Yet, while there, I did not hear a single lecture on sanitary science, nor were boards of health ever mentioned.

Public health had long been left to the unprofessional care of aldermen, councilmen, and civilians, who were totally ignorant of sanitary science and practice; and a great many localities in this country still cling to this old custom. So little was the utility of health boards known, that even where they did exist they were composed of laymen. But lately, as sanitary science has progressed, it has become apparent that the medical man is a *sine quâ non* to such boards; and, later still, when their great usefulness was fully realized, homœopathic physicians were added, to render them more efficient, and in response to the demands of public weal.

Who is to declare what are nuisances injurious to health? Many nuisances cannot, in the eye of the law, be considered as detrimental to health. Although everything that tends to the discomfort and suffering of mankind should really be so considered, still a limit must be placed to power, even in hygienic regulations, else a board of health might become a most despotic government. A dog barking at night in a back-yard might

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keep awake a whole neighborhood, and thus be detrimental to the health of some of the residents. It would be too much latitude to give a board of health power to immolate all barking dogs, though they can be suppressed by proceeding against them at common law as nuisances detrimental to the well-being of a community.

To declare a certain thing a nuisance injurious to health is a matter of great importance, as it may affect the interests of the industry and commerce of a community. Such a declaration should only be made with a full knowledge of the effect of the presumed nuisance on the human economy. For instance, in declaring certain trades and branches of industry as prejudicial to the health, either of the laborers or of those exposed to the emanations of the same, it is necessary not only to know how they are conducted, what agents are employed therein, what solids, fluids, or gases emanate therefrom, but also what effect their exhalations and debris may have on the human economy. Therefore, before making such declarations, special studies of the matter concerned must be made, reliable tests applied, and statistics confirmed, that officers may be enabled to determine whether they are to be considered injurious to health. Now who are to prosecute these studies, apply these tests, and direct these examinations, if not experts fitted for such duties by proper training?

Where such boards do not exist, nuisances exceedingly dangerous to health have been tolerated for scores of years by people ignorant of their evil properties. Many have died and been consigned to the grave without a question being asked as to how such deaths occurred, nay, how such deaths could have been prevented. Where an efficient board of health exists, inquiries are instituted and proper prevention applied.

A municipality lays out and grades streets, builds sewers, etc., but who looks out for the sanitary engineering of the same? Is anything more deleterious to health and dangerous to life than bad drainage and defective sewerage? Look at overcrowded localities in cities of extended proportions; tenement houses inhabited by people ignorant of the effects of filth and tainted air, and reckless even in the production of these evils! It is from

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these pest-breeding agencies that fatal diseases and epidemics spread like a mantle of death over an innocent community.

Such places should be periodically inspected by an officer of health, who can detect the causes and character of the maladies that may issue therefrom. Such knowledge should be at once conveyed to the board of health, that it may take prompt measures for the removal of the filth, for the isolation of the sick, and for preventing the spread of fatal maladies.

It is well known that sporadic cases of yellow fever, cholera, typhoid fever, and the plague, may assume an epidemic form when the dejections of the sick are cast abroad and find an atmosphere and a soil favorable to the propagation of the fatal germs. It is here where the skill of the sanitarians is severely tested, and where health boards must convene, debate, and determine upon the best means to arrest further development. In what helpless condition a community is at such times where no such organizations exist, or if they do exist are composed of men not qualified to undertake a task demanding so much learning! The scythe of death mows down thousands; appeals from the afflicted reach from sea to sea; national sympathy empties its storehouses of benevolence, yet there is not a hand to stay the fury of the king of darkness, and the populations must wait until the revolutions of the earth carry out of the pale of the destroyer the benighted people.

Water, that indispensable article to all life, may be otherwise than healthy. A spring that has for many years been renowned for its purity may become a vehicle of poison to every household, by a leaky sewer emptying its foul contents through underground currents into it. Streams may also be polluted by allowing offal to drain therein. It is then the duty of the officers of health to watch that the potable water of the community is constantly maintained in a pure state.

As to food, organized inspection of experts is necessary to prevent the sale of what is unwholesome and adulterated. These experts should be men learned in chemistry and microscopy.

Vital statistics, the double entry of life and death, is another important department of a board of health. Without such records how can governments legislate intelligently for the pro-

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tection of the health and life of the people? Such records are kept only where there are efficient boards of health. To obtain a national record of the mortality and its causes among the people, not only vital registration is necessary in every district, but there should be a uniform system. I regret to say there are but few places that have such records in this country, and those few are not kept in a uniform manner. It is to be hoped that under the efforts and guidance of the National Board of Health mortuary lists will, in the future, be kept in every county and State in a uniform manner. This is one of the objects the National Board of Health is endeavoring to attain.

The above varied duties of boards of health demonstrate their utility, but in a country like ours, where independence is an heirloom of its people, where jealousy of power is strong, where the nation, the States, and the municipalities govern themselves, where an innate apprehension that the big may swallow the small ever exists, it is impossible to ever attain a uniform legislation or practice of sanitary science. Thus it happens that the efforts of one State or municipality are often baffled by the indifference or capriciousness of the legislators of a neighboring State or county. Let us take, for example, Brooklyn, New York, and Jersey City, three cities of immense proportions, separated only by a narrow sheet of water, which is so constantly traversed by the people of each city as to practically amalgamate them. Yet, each of these counties has a government of its own, making laws, rules, and regulations, not only unlike but often totally at variance with that mutual understanding necessary to mutual protection. It happens also, and, I regret to say, very often, that while a board of experts is provided in one county, none whatever is provided in the one adjacent. Yet the modern means of transportation have so nearly destroyed distance that one community is constantly exposed to the danger of any contagion existing in a neighboring one. State boards and the National Board of Health became necessary as adjuncts to the solution of this great problem.

The State boards in fostering a society in the State must secure harmony and correlation between the local boards and render them more uniform, more energetic, more efficient. They will

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also supply the power impossible to local boards, on account of circumscribed jurisdiction, and will supervise and act in the interest of the whole State. But being confined within the area of State jurisdiction, they have no authority to act for the benefit of the whole country. The interstate care and supervision must then be carried on by the National Board of Health, whose efforts will be to bring the States into harmony with each other, and to supply that power which as States they can never wield. The relation of these three kinds of boards of health will then be intimate and reciprocal, forming a grand complex in which, individually and collectively, they will work in perfect harmony for the good of all.

The following illustrations may serve to simplify the above premises.

Quarantines have heretofore been created by local or State legislation, merely for the protection of local or State interests; therefore, the requirements of a quarantine of a given town or State need not, necessarily, be like those of a neighboring State. This difference in legislation has proved at times not only dangerous, but fatal, to a neighboring State, or to the nation itself. A ship which does not carry a clean bill of health, not being able to enter the port at New York, on account of the stringency of its sanitary regulations, would, perhaps, push on to Baltimore, where it might be permitted to enter, from the laxity of the local sanitary regulations. Should that occur, discrimination would be in favor of Baltimore, and the commerce of New York naturally flow to that city, to the detriment of New York's great interests. This would be wrong in equity, as well as in morals, because New York would then really be punished for being more careful in her sanitary arrangements than Baltimore. Heretofore the nation has relied entirely for its own protection upon this valuable legislation of the separate States, and has thus been exposed to the inconsistent legislation of the various States, into which for want of uniformity and harmony dangerous epidemics have been allowed to enter, to the detriment of the country as a whole. But now the National Board of Health, authorized to act in the name of the whole country, can

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step forward and enforce an interstate quarantine which will protect all alike.

Again, an infected ship leaving New Orleans for St. Louis, Mo., escaping the watchfulness of Louisiana, could get into Mississippi waters, where there may, or may not, be a quarantine. During this transit, the period of incubation elapsing, the yellow fever may break forth while drifting on Tennessee waters, and, thus uninterfered with, carry the contagion to the very heart of a distant community. But now the National Board of Health steps in, places sentries between the States, which will call upon that vessel to lay to and give a "password," which will be "health," or else be arrested on the spot, to undergo such examinations and applications on the part of the government as will render her innoxious while *en route* to her destination.

This interstate supervision of the government is the most important step in the progress of sanitary practice that has taken place in this country since the Declaration of Independence.

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XIV.

WARMING OUR HOMES.

By D. H. Beckwith, M.D., Cleveland, Ohio.

The warming and ventilating of our homes are subjects that should be studied conjointly. As I considered the subject of "ventilation" in my paper presented to the Institute in 1878, I now present the "warming" of our homes.

In olden times a fire was built in the middle of a house, and the smoke allowed to find its way out through a hole in the roof. Since that time many plans and devices for warming dwellings have been in use; some have been healthful and economical, some dangerous and expensive, and some have been productive of disease and death. Evidently the best plan for warming our homes should be the simplest, most inexpensive, and one practical for all classes of society. The average temperature of the body in our climate is about 98.4° Fahr. The temperature of the atmosphere, on an average, in Cleveland during the year is about 55.6° Fahr. Our bodies are constantly generating heat and, *cæteris paribus*, they usually remain at about the same temperature; and when, from any cause, the temperature is increased or decreased we feel uncomfortable.

There are certain circumstances which influence the heat of our bodies. Active exercise bringing into action our muscles, raises the temperature, while mental exertion, if long continued, lessens it. Exposure to cold without physical exercise lowers the temperature of the body. Directly after a meal, or a drink of ardent spirits, the temperature is lessened. Changes in the weather from hot to cold or cold to hot changes the temperature of our bodies to a certain extent. The maximum temperature

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is clearly ascertained to be in the morning on awakening, and is lowest about midnight. Heat is given off from the body by direct radiation from its surface, by air that is breathed, and by exhalation from the surface of the body.

Warming and ventilating our homes properly are problems upon the solution of which the most experienced sanitarians are far from being united. Even if we possessed the knowledge as to the means of accomplishing this we could hardly induce many of our patrons to adopt our suggestions. There are three difficult things to be combined: 1st, sufficient heating; 2d, ventilation; 3d, economy. Many persons think it an easy matter to ventilate regardless of temperature, or, in other words, to warm a room without any regard to a supply of fresh air. A great difficulty of warming lies in the fact that much of the heat which should be utilized is carried off by ventilating ducts. Keeping these facts in mind we will now consider the different kinds of apparatus which are used to warm our dwellings.

I. *Air-tight Stoves.*—In a room warmed in the ordinary manner with a stove alone, the temperature at the ceiling is from twenty to sixty degrees higher than near the floor. The heat from the stove assists the natural ventilation to a certain extent. There is a slight outward passage of the heated air through the ceiling and upper part of the walls, and also in and out through the cracks around the doors and windows. The natural ventilation or circulation due to these causes goes on at a greater rate than is generally supposed. Our plastered walls, the floors, and ceilings are anything but impervious to air. With a difference of four degrees in the temperature above and below a plastered ceiling a cubic yard of its surface would transmit about ten cubic feet of air per hour. But with all the assistance natural ventilation can afford, the air-tight stove alone is a very poor means of providing for our needs during the winter months. It furnishes no adequate means for a supply of fresh air nor the extraction of foul air. Where the air-tight stove is used for warming it would be conducive to health to have an open grate, if but little fire was kept in it. Even if there is no fire the chimney acts as a ventilating shaft.

II. *Open Grates.*—With an open fire alone, the occupants of a

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room are warmed by radiation from the incandescent fire, and by radiation and reflection from the different parts of the grate; ventilation is carried on by the constant current of heated air rushing up the chimney while the fresh air enters through every crack and opening, providing there are no special inlets for its entrance. Open-grate fires always cause considerable circulation, and are cheerful, but they induce cold drafts through the doors and floors of the room; at the end of the room opposite the fireplace the temperature is below the average, and the cold current near the floor chills the feet. In the open-grate fire the ventilation of a room may be very greatly improved by having an entrance into the chimney a few feet below the ceiling. The opening should be valved, or a better way would be to have a flue running close to the chimney, the entrance to the flue being near the ceiling. The hot air in the chimney warms the flue, and there is a constant upward current established, without any risk of reflux of smoke. This plan must be introduced while the house is in process of erection.

III. *Ventilating Grates.*—The ventilating fireplace is a great improvement over the open grate. It consists of a fire-box and grate, similar in form to the ordinary open fireplace. It is surrounded by an air space, which is between the fire-box and the usual brick backing of the grate. The smoke, after it leaves the fire, passes upward through an iron flue to the height of the ceiling, and the space around the fire-box is continued upward around the iron flue. The air space opens into the room just below the top of the iron flue; at the bottom it is connected as directly as possible with the outer air. The operation of it is evident. The open fire warms the walls of the room by direct radiation; the incoming air is warmed by its passage around the fire-box and the iron flue. This plan of warming our homes does away with the cold drafts mentioned in connection with the open-grate fire.

IV. *Open-grate Stoves.*—The common open-grate stove has the same objections as mentioned with the open grate. There seems no good reason why an open-grate stove cannot be constructed on the same plan as the ventilating grate. It should have connection with the outer air, a space between the fire-box

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and the outer casing, which space should extend as high as possible. Such a stove could be constructed more economically than a grate, and could be made to give more heat for the amount of fuel consumed.

V. *Ventilating Stoves.*—A close stove may be made a healthful apparatus by providing flues for the exit of foul air from the room. It could have all the advantages of the open grate excepting that of radiation from the fire itself. A cheap one can be made by inclosing an ordinary stove, wholly or in part, in a metal casing, and connecting the space thus formed with the outer air. In St. Thomas's Hospital, London, they have the common stoves cased in several wards. The mere providing of a fresh-air duct opening beneath the stove will usually supply all the fresh air needed.

VI. *Hot-air Furnaces.*—The hot-air furnace may be compared to a large ventilating stove set in the cellar. With the use of the open grate they furnish one of the most desirable methods of warming our homes. Cold air, coming in from outdoors, is warmed as it passes around the air-chamber of the furnace, and soon passes through the pipes into the rooms above. Grate fires should be kept up to furnish radiant heat, as well as to aid ventilation. Among other advantages which this system has to recommend it is that of keeping the floor of the first story warm. It is not an expensive method of warming and ventilating dwellings. Sometimes the occupant of a dwelling wishes to economize in coal bills, and the air is taken from the cellar, instead of out of doors; this method has serious objections, and should never be adopted. I have seen schoolhouses and churches that took the air from the cellar instead of the outer atmosphere. Every house that has hot-air furnaces should also have open-grate fires to make the heating complete. Great care should be taken in the construction and arrangement of fresh-air ducts and passages that supply our furnaces with outdoor air. They should open to the fresh air at the most favorable point for securing it free from dust and smoke, from gases that may settle toward the ground, and from pollution from every source. The collection of dust upon the heating surface of furnaces, or any heating apparatus, should be carefully avoided. After standing unused for

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any length of time, stoves and every other apparatus should be carefully dusted at every part that comes in contact with air which is to be breathed. The construction of any stove or furnace so that cleaning cannot be accomplished makes an argument against its use.

VII. *Steam and Hot Water.*—The rapid circulation of steam in pipes, and the large amount of heat given off by its condensation, makes its use of great advantage in locations as cold as those of our Northern cities. The facility with which water holds its heat after the means of warming have been removed, and the little care necessary to attend to such a heating apparatus, makes it valuable in many of our homes. The boilers and apparatus, both for steam and hot water, have been perfected so as to work automatically very nicely. The method, known as direct radiation, by means of coils of pipe or radiators of any kind, through which a current of steam passes, and which furnish more or less heating surface, *all* situated in the apartment to be warmed, without *any* provision for a change of air, is little better than the use of air-tight stoves alone. Some persons have an incorrect opinion that steam heating by this plan furnishes a moist atmosphere, because the pipes are heated by steam, instead of by the direct action of the fire. The steam is tightly inclosed in the pipes, and no leak can anywhere be allowable. There is sometimes an air-cock upon the radiators which may be opened, but the vapor from this is not agreeable to the sense of smell and its hissing sound is annoying, so that it is not practicable to increase the humidity of the atmosphere by this means. Another method, known as indirect radiation, is accomplished by constructing an air-chamber in the basement, which contains radiators or coils of pipe; the air is taken from the outer atmosphere to these heating chambers, where, after being warmed, it is conducted to the rooms above.

This system, in its connection with steam and water, was brought into favor by having superseded the plan of warming by direct radiation of steam heaters, and to which it is much superior. The advantages of this plan over the hot-air furnace, to which it is quite similar, lies in the fact that the air passes over no surface liable to become red hot.

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Another system of using steam-pipes, which may be said to be both direct and indirect, and which consists in placing radiators or coils beneath the windows, or other openings, direct to the outer air, is one of the best methods now in use. The pipes furnish radiant heat to the room, and an opening at the bottom of the windows, or thereabouts, furnishes air to the apartment; this air is warmed by contact with the pipes as it enters. The upward current of warm air in front of the windows cuts off the effect of the cold glass.

In the different kinds and sizes of our dwellings, various styles of heating have their advantages and particular appropriateness. Morin says: "Every heating apparatus, or system of heating, which does not provide in itself for an ample and regular change of air, or which is not connected with suitable arrangements for producing such a change, is injurious to health."

It was not intended in this paper to give all the directions which would be needed in the design and construction of the many kinds of heaters, but to offer suggestions, and state such principles as are essential to their success.

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XV.

THE DRAINAGE OF OUR HOMES.

By E. U. Jones, M.D., Taunton, Mass.

The subject presented for consideration in this paper naturally falls under three distinct divisions:

(1.) The reasons which make drainage a necessity.

(2.) (*a*) The matters, (*b*) the results of drainage.

(3.) The modes, general and special, of drainage.

The dear word "home" rests in each one's heart with a sacredness and fulness of meaning which no adjectives nor rhetorical description can ever define. It is not a public, but a private word, and has its interpretation in the needs, the tastes, and the resources of each individual existence. When put into realization it has for its practical end the comfort and health of its inhabitants. The ventilation of a house may be excellent, and after the most approved scientific methods; but it may be the means of coaxing upwards the very germs of discomfort and disease that we have striven to avoid; for there is more disease in defective drainage than in imperfect ventilation.

Omitting, or touching only incidentally, those who temporarily occupy the better or poorer class of tenement houses, let us examine—

(1.) The reasons why perfect drainage is a necessity to the comfort and health of the home-builder and the home-dweller.

The effects of deficient or defective drainage upon the human system are of two kinds,—indirect and direct. The indirect consists of the normal effects of simple dampness, whether confined within the walls of the house or rising from a water-laden soil, and of that same dampness or moisture laden with impurity.

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This indirect action is usually exceedingly slow, and sometimes does not manifest itself till the direct action of some other poison makes it evident. There are those whose naturally resistant constitutions can become inured to almost any poisonous action; but as a chain is no stronger than its weakest link, so the perfection of a residence is tested by the health of its feeblest and most sensitive dweller. It is well known that to those whose lungs are weak, or whose nervous system is exceedingly sensitive, or whose digestive powers are not of the strongest, or whose circulatory system is languid, dampness is a great foe. It makes itself felt in the formation of tubercles in phthisical subjects, in frequent influenzas, in forms of low bilious and malarial fevers, in neuralgias and rheumatisms, and often in diarrhœas and dysenteries; and this, especially, when the dampness so pervades the house and surroundings that it cannot be shut out during the sleeping hours when all the forces of the system are least capable of resistance. During sleep the blood is more sluggish, the waste is decreased, and, under proper sanitary conditions, a certain recuperation takes place which is not at all accounted for by mere rest. Now, if in this condition a noxious element is constantly being received, the system not only takes it, but allows it to exert its utmost effect, most usually in its indirect preparation for the future reception of some direct toxic agent. More than this, if the simple dampness itself cannot be the cause of injury, it serves as the means of conveyance for any decomposing matter that may be evolved in its vicinity, whether that decomposing matter be under the control of the home-dweller or not.

This dampness may arise from defective drainage, but it nearly always does from deficient drainage, either without the house or within it. One cause for it may here be mentioned, with which drainage has nothing to do, viz., the habit of placing cisterns and wells in the cellars of those houses which are not supplied with aqueduct water. The practice cannot be too strongly reprobated. The healthy and resistant system may live over such cellars with impunity for a long time, but the sickly and sensitive cannot. The source of dampness is usually in the cellar, as well in city houses, which have a good system of sewerage, as in the country house, which has to depend on its own sewerages.

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In the homes of farmers, and of those who are in the habit of storing their vegetables and winter supplies in their cellars, perfect drainage becomes imperatively necessary. The preservative qualities of dry air, and the rotting qualities of dampness, are well known. Yet, when one enters the cellar of a farmer (taking this as the most marked illustration) the dampness, the closeness, the darkness, remind one more of the churchyard vault, and of death and decay, than of life and strength. The chills run over one, not less from the darkness and the lack of ventilation than from the damp soil floor or the half-rotten boards. The odor of decay is very preceptible, and the dampness comes up through the thin floors into the living rooms, laden with it. It is not too much to assert that many a death has resulted from sitting in those rooms of a farmer's house that have seldom been opened to the freshening and life-giving influnces of pure air and sunlight; or, to put it more properly, from the death-dealing power of the pestilential germs stored therein. The same is true of many of our village houses, the floor of whose cellar is only the damp soil, or thin boards, requiring frequent renewal, resting on the ground and periodically flooded by the spring and fall rains. The fact of the chilly warning that these same rooms give is one reason why they are so little used, and why they do not cause more disease. The few rooms in which a family live are full of air and sunlight, which render innocuous the evil effects of the cellar, combined with the fact that these living rooms are seldom placed above the storage part of the cellar. Many well know what "cleaning out the cellar in the spring means, and how much decayed and mouldy vegetable matter, in advanced stages of decomposition, is usually gathered up from the floor. A farmer would be shocked and disgusted if it were suggested that a sheep's carcass be allowed to rot all winter in the cellar, but it is a well-known fact that the danger to health from decaying animal matter is small compared to that resulting from the decay of vegetable substances." (Bayles.) The comparative immunity that our forefathers enjoyed from this indirect disease-producing power was due to their open-air labor, to their openly built houses, and to their splendid open fireplaces. But it is not a

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foolish question to ask if we are not suffering from some of the germs implanted then?

The direct effects of imperfect or deficient drainage are from the non-withdrawal of putrescent and putrescible matters. To the results of their decomposition are now assigned the production of that class of diseases called "zymotic." These may be sporadic, endemic, or epidemic, and are classed as contagious or infectious. Among them are all the major exanthemata, enteric fever in its various forms, yellow fever, scarlet fever, diphtheria, the various choleras, dysentery, diarrhœas, etc. It is, indeed, a mooted question whether any or all of these do originate, *de novo*, from the direct action of the formations arising from putrescence; but it is an unquestioned fact, that the disease having been once introduced, filth, and especially decomposing filth, is a most powerful aid in its rapid spread. Nor is it hardly less certain that the "germ" finds in filth of all kinds a most perfect soil for its growth and vitality. Dr. Lionel S. Beale puts this action of the matter in a strong light. He says, "Fever germs will not be developed directly from filth, but by permitting people to live year after year in open violation of well-known sanitary laws, the generation of fever poison in their bodies is favored, while its free growth and multiplication, if imported, is reduced to a certainty. It is, therefore, our aim to prevent people falling into that condition of health which favors the organization and propagation of contagious fever-poison in their bodies. . . . Even though a town, well-drained and supplied with pure water, should be exposed fully to the assaults of hosts of fever germs in their highest state of morbid activity, they would suffer no injury." All cannot subscribe fully to this statement, for there are too many cases of these zymotic diseases that can be traced to no other source than the products of putrefaction. Many a case of typhoid fever in country and farmers' houses has been traced directly to the cellar, and a clean and ventilated cellar has stayed the progress of the disease. Many a one in the city has evidently had no other cause than sewer-poison; and many a locality has escaped the disease that was decimating its neighborhoods by its cleanliness in this matter. If these diseases do arise *de novo*, their origin can be nothing else than putrescence. This is

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found in ordinary drains, city sewers, in the waste-pipes of houses, in cellars, manure heaps, and privies, and in the non-leaching soil that has been made the receptacle of the refuse of the kitchen. The contamination of well-water has come in for its full share of the odium, and well-authenticated cases show that it is not blameless in this matter, and help to point the argument for perfect drainage.

(2.) (*a*) The matters; (*b*) the results of drainage.

Generally speaking, the matters of drainage are all manner of filth; to reduce it still more closely, they are water, for if the water could be abstracted from the question there would be no danger from infection. It is impossible for decomposition to take place in perfectly dry states. It is water, and what it holds in suspension and solution, with which we are to deal in this question.

The pure water in the soil outside of our dwellings is first to be attended to, until its natural level is below that of our cellars. For it will always leach naturally to the lowest point, and no stone wall, however thoroughly pointed, no floor, though laid thick with cement, can keep it from making the cellar damp. This level must be the starting-point of the external drain, or else dampness, unwholesomeness, and the early decay of all substances stored below this level will sooner or later occur.

The next thing to be removed is the fluid refuse of the kitchen. This holds in solution or suspension matters which of themselves are not deleterious, but which may become very harmful after decomposition has set in. They are usually hot when they are cast into the drain or thrown out of doors, and commonly contain a large amount of grease, derived from the soap used, and from the cleansing of the ware needed in preparing and partaking of food. Decomposition does not rapidly take place, but one or two and sometimes three days intervene before the refuse is much affected. But in its passage through the waste-pipes and the drain, and especially in the village cesspool, those particles, which are simply held in suspension, cling to the sides or settle, are then ready to undergo change. A portion of the products of this change form new and harmless combinations, and aside from their unpleasant odor may be disregarded as af-

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fecting health, but another portion form gaseous and soluble compounds which are decidedly injurious. If these find their way to "the blessed air of heaven" they too become innocuous; but if driven back into the close rooms and confined air of the house they may become deadly in their virulence. If this refuse is thrown out of doors, as is too frequently the case in many country homes and farms, the open air and the filtering and disinfecting qualities of the soil may render them harmless for years, unless they find their way into the well. But this latter consideration, as well as cleanliness and the sweetness of the air around the home, should decide that they be carried as far as possible from the house.

The disposal of human and animal excreta becomes a very important matter in the comfort and health of a home. It is the decomposition of these which has been found to give off the most poisonous gases, and to be the most provocative of some diseases, and to endanger life. "It might be supposed that these substances had already been decomposed, but such is not the case. The decomposition is very imperfect, and when they are allowed to stand putrefaction sets in, closely allied to, perhaps exactly the same, as that which takes place in other animal matters, such as blood, or in a mixture of flesh and water. When these substances decompose the result is, so far as we know, nearly the same as the decomposition of the entire animal body. We are not able to tell the difference between the products of putrefaction from our cesspools and those from our graveyards." (R. A. Smith.) And it is, more particularly, the product of this putrescence that differentiates between the drainage of the city and the country home, or rather between those homes connected with a system of sewerage and those whose drainage is all upon their own premises. In the country these excreta are usually deposited out of doors and at some little distance from the house; their gases are slowly evolved, and as evolved are distributed into the air, diluted or oxidized, and thus rendered practically innocuous. Many of their other products are absorbed by the earth, and thus are disinfected. But great disinfectants as earth and air are there may come a time when they both will be saturated, and then the danger is great. This saturation takes place more

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rapidly in damp localities, in which it is not merely the moisture of the soil that holds the substances in it, but more particularly the exhalations from that soil, especially at night, which take up and absorb these deleteria, holding them in suspension in the air and thus causing them to be breathed at a time when the human system is most sensitive to them. "An atmosphere may be tolerated in working hours which would produce serious disease if breathed when the system is in the non-resistant condition of sleep. This fact is well known to the inhabitants of malarious districts; they do not hesitate to walk or drive, especially after eating, through regions in which they could not sleep with impunity." This peculiar danger is felt more in the unsewered districts, where the privies, the barnyard, and the pigpens are constantly sending forth their exhalations, and rendering the air and the soil pregnant with them. The saturation of the earth carries with it, in such localities, another danger, for as it depends in a certain measure for its disinfecting qualities upon the oxidation of its contents, that oxidation is prevented by that very condition. Hence it carries with it, unoxidized, the products of decomposition, seeking the lowest place for deposit according to a natural law. This receptacle is commonly the well, whence the householder and his family may be drinking a pleasant water, whose very pleasant taste may be caused by those products which are laden with disease and death. These products, then, most imperatively demand efficient drainage.

In those homes connected with a system of sewerage these same products require more close and intelligent attention; for, as the thing now stands, the air has but little to do with disinfecting them, or destroying their evil powers. Here eternal vigilance is the only price of safety, and the home-dweller's supervision must extend, not only to his own premises, but to the extremities of every sewer with which he is connected; for in many cases the deadly poison is not formed within his own house but in the general sewer system. Hence the name usually applied to this poison is "sewer-gas." It is the product of putrefaction, taking place within the sewer, requiring a heat of but 60° to 90° F. to perfect it, combined with the absence of dry air for its oxidation. The greatest problem connected with the

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sewer systems of the present day is their proper ventilation, and until this is secured every house that drains into a sewer is in danger.

What is known of this gas? Simply its chemical properties, and the fact that it is deleterious to health.

So far as its chemical properties are known we may take the analysis made under the direction of the Sewer Department of Paris of the concentrated gas which bubbles up to the surface from the sewage-beds at the bottom of the river Seine. It is probably not unlike what exists in our own sewers, and was found to be:

Carburetted hydrogen,	72 88
Carbonic acid,	12.80
Oxide of carbon,	2.54
Sulphydric acid,	6.70
Other substances,	5.58
	100.00

The "other substances" are chiefly ammoniacal compounds, with organic vapor of which we know nothing.

Although the analysis shows us elements that are capable of injuriously affecting the health, yet the normal deleterious action of none of them is what we experience as the effects commonly ascribed to sewer-gas. They are such as every chemist is frequently inhaling with impunity. They have their characteristic odors or manifestations. Their synthesis will not reproduce the sewer-gas. And there seems to be no other conjecture probable than that the constituents which produce such deleterious and fatal effects have hitherto escaped analysis. They may exist in the form of a vapor, too subtile to be easily caught, yet powerful enough to corrode the lead pipe in which it may be confined. Its odor is not marked, though what it has is sickly, warm, and mawkish; and its first effects seem to be headache and debility. The foul and nauseating odors that often arise from a cesspool or sewer are not believed to be dangerous, or to affect the health otherwise than by rendering the air impure. They are not necessarily an accompaniment or an adjunct of this poison, for true sewer-gas may be formed wherever there is organic matter "un-

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dergoing decomposition in the presence of superabundant water, and in the absence of light and free ventilation." It may be produced in the ordinary close and dark storage cellars of the farmer, especially if those cellars are damp. It may be found in the vault or the ordinary house-drain, and it may be possible that it may be found in the well whose waters have been contaminated by the leachings from a cesspool, privy, or manure heap, held in suspension, if not in solution. One thing seems certain, that the pathological effects are analogous in all these cases, and, if we are permitted to reason *a posteriori*, the cause must be the same. It has usually been held that water containing a large amount of nitrates and nitrites was undoubtedly furnished with these salts from contamination with sewage, or decomposing animal dejecta in some form, and that such water was dangerous to the health. This is true in the general, because these salts are formed during the decomposition of organic matter, and yet they are found in large quantities in water noted for its healthfulness, and to which no cause of disease has ever been traced. But, whatever may be the *materies morbi*, it is pretty evident that efficient drainage of the decomposing products of animal and vegetable excreta is imperatively necessary.

Although coming under the general head, yet one special matter of drainage cannot be overlooked,—the disposal of the dejecta of disease. These dejecta, especially in dysentery, cholera, typhoid and yellow fevers, seem capable of being held in solution, and of retaining their vitality for a considerable period of time. According to well-authenticated cases they may be carried long distances, at least twenty-five miles, and still retain all their virulence; they may be carried from cesspool to well, and from well to well, without losing their power for harm. They may affect the contents of the sewers into which they are drained to such a degree that all the branch sewers and drains entering into it become the carriers of the deadly poison. The nature of this poison is as unknown as that of sewer-gas. The same amount of oxidation does not seem to have an equal influence on it, and it has its own specificity.

(*b.*) The results to be gained by the drainage of our homes are the perfect and rapid disposal of all the noxious and disease-pro-

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ducing matters that may exist there, whether the home be in the city or country. It may be stated that thousands of families have lived for many years with the very inefficient drainage that is condemned and yet have enjoyed as good health as the majority, which is undeniably true. But it is true, also, that the statement may scarcely have left their lips before the evil effects may have made themselves manifest. The effects of such poisons are cumulative in their nature; and just under what conditions, or when these conditions will be in conjunction, we cannot tell. The design of efficient home drainage is preventive, not curative; and its ultimate purpose is to render rare, even impossible, those epidemics that spread through our land. The extent to which the death-rate has been lowered in cities after they have received even the imperfect drainage of the present day warrants this hope. "The improvement of public health, as expressed by that unerring guide, the death-rate, corresponds," says Dr. Derby, "with all the means by which air and water are kept free from pollution." An investigation into the causes and conditions of yellow fever in the United States, with the help of the library of the Surgeon-General at Washington, made in 1876, and a personal experience of over two thousand cases, concludes that nothing is so important in the prevention of yellow fever as proper water supply and sewerage. (Dowell.) "The fact, however, stands unquestioned, that in some way or other removal of filth lowers death-rates. Berlin and Munich, the filthiest and the most scientific of the German cities, deserve Traubé's sarcasm of not being able to stop the cholera even in winter,—a more or less continuous epidemic, so to speak, having lasted since 1866,—while in London and Paris, the cleanest of large cities, the last epidemic (in 1866) fell very lightly, and the death-rates are one-third lower than in Munich and Berlin. In Hamburg and Dantzic, the only German cities where systematic sewerage works have been completed for several years, the increased cleanliness has reduced the mortality in a very great degree. In Dantzic, typhoid fever has become a disease chiefly of the suburbs, where there are no sewers." (Folsom, in *Massachusetts Report of State Board of Health*, 1876.) Reports of towns and cities in our

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own country having good drainage, with ample water supply, show favorably as to the virulence and rarity of their epidemics.

But the results of efficient home drainage in unsewered towns and villages are not confined to the homestead, but favorably affect the neighboring premises. The underground water-courses are liable to contamination from the same causes which so often render wells sources of disease. Experiments have often been made showing the connection of wells with one another through these deep courses, as well as the filtration that takes place from a higher to a lower well. Many diseases have been carried in this way.

Another result of efficient home drainage is in lowering the level of the soil-water, and thus rendering the ground outside of the house drier. The importance of this in pneumonic diseases, and in the development of scrofulosis and struma, cannot be overestimated. Statistics show a decided decrease of pulmonary consumption in every town after proper drainage. An English physician ascended an eminence near the town in which he lived, and by the low-lying fog could accurately mark out the limits of the greater part of his practice. Malarious diseases have oftentimes been completely removed by such drainage as lowers the water-level of the ground.

(3.) The modes, general and special, of drainage.

In country homes and farm-houses the main thought of drainage is to get rid of the slops and refuse of the kitchen, and this is usually done by means of a plank drain conducting into the barn cellar, the privy vault, or into a leaching cesspool. This is commonly untrapped, frequently open at the top, placed but little below the surface of the ground, never supposed to be tight, quickly rotting, seldom renewed, exposed to and easily affected by the frost, and catching and retaining matters of putrescence. Add to this the amount of grease and slime that the unplaned surfaces retain, the usually direct rays of the sun in the heat of the day, and we have all the factors necessary for the production of typhoid poison. It would seem as if the only salvation for such an exposed household lay in the fact that their lives are largely in the open air, and that the gases formed are quickly oxidized.

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It may be enunciated as the first general law that no drain, intended for permanency, or leading from a house, should be composed of perishable material, or be placed at a less depth than three feet below the surface of the ground.

Supposing some non-perishable material, stone, brick, earthenware, or iron, to be selected for the external and general drain, two very important points are to be noticed, having for their object perfect self-cleansing, complete continuity, and smoothness of the internal surface. This is more especially needed, if the fall be slight, and is a matter that in no case should be overlooked. In order to secure the continuity of the surface two things must be attended to; the drain must have a solid and even bed for its resting, and the joints must be well cemented, being wiped perfectly smooth after the length of pipe has been firmly placed in position. These points being attended to, and the calibre of the drain being sufficient, the ample delivery of the waste matters of the house will be secured, as well as the impossibility of their contaminating the earth in their passage.

The termini of even so simple a drain, as that which carries only the kitchen refuse, need special care. The house terminus should be well trapped just outside of the cellar walls, combined with a good sink-trap within. This matter will be referred to again. The distal terminus is into the barn cellar, into some near stream, into a blind drain or leaching cesspool, into a tight cesspool, or into a system of tile drains for the purpose of irrigation and fertilization. In those farm homes in which the barn is situated at some distance from the house and well, and in which proper composting of manure is carried on, the terminus may well be in the barn cellar. The free ventilation, which such cellars usually have, destroys, or renders innocuous, the products of the decomposition; the gases are never driven back through the drain, and no danger need be apprehended.

The cesspool system, in one or other of its various forms, is in general use in those homes not connected with any system of sewerage, the blind drain being considered only as another form of the leaching cesspool.

The leaching cesspool is only a well sunk from four to six feet into the ground, its sides stoned up with ordinary cobble-

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stone, with a covered top. Sometimes only a hogshead is sunken till its top is level with the surrounding ground, and covered with boards. It is dependent for existence upon the felt need of some out-of-sight receptacle for the kitchen refuse; it is dependent for its value upon the character of the soil in which it is placed; and for its perpetuity upon the manner in which it performs its office, and the material of which it is made. If the soil be a sandy one, or gravelly, or of a porous loam, such a cesspool, if properly placed, may perform an unobjectionable office for years, in removing and disposing of the fluid contents, and the watery portion of the waste matter discharged into it. Earth is a wonderful purifier and disinfectant, not only in its own right, as it were, but in the right of its holding a large amount of air within its interstices. It is a system born of necessity, and one that will continue to be used in spite of its many and great faults. Yet one writer uses this language: "These ditches do not commonly fill up with water, but the interstices between the stones become choked with grease and solid filth, and long before the outflow of the house-waste is checked, the gaseous products of decomposition, formed in great volume, work back through the pipes. and past their seals into the living and sleeping rooms of the house. So far as healthfulness is concerned, I would as soon carry a speaking-tube from my bedroom into a grave, where somebody lay rotting, as carry an unventilated waste-pipe from my washbasin into such a subterranean grave of decomposing filth as this." (Bayles.)

The faults of such a cesspool, or blind drain, are so many as to make its use perfectly inexcusable when any other form of sewerage can be adopted. It is usually placed near the house, and its bottom is seldom or never lower than that of the cellar; the result being that the leaching takes place downward toward, and often into the cellar. The foul odor fills the cellar and permeates the house, bringing danger, if not actual disease, with it. For the first year, or more, the earth permits the filtered water to pass through it and away, but when its point of saturation is reached, it no longer acts as a filter, but the infected waste is forced through it by the pressure from behind, and the law of gravity. The evil consequences of such infection has been

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before noted, and though the blow be long delayed, it will surely come. The well, too, is usually in near proximity, and receives daily a portion of the more or less filtered contents of the cesspool, in accordance with that law, which makes water seek the lowest level. Here, too, the danger is not great, so long as the filtering power of the intervening earth is perfect. But when that power ceases, the well becomes a positive source of disease, and possible death. This danger is great in proportion to the less depth of the disinfecting earth, and is positive and rapid, when a hard-pan or clay stratum exists but a few feet below the surface. But the greatest source of danger is, perhaps, in the cesspool itself; for, while the comparatively innocuous fluid contents have passed away, the more dangerous solid waste remains, covering the sides and the bottom. This not only lessens the rapidity of the filtration, both downward and lateral, but the matters themselves are mainly those which are capable of taking on putrefaction,—animal matters,—grease in its various forms. This decomposition results in the production of the regular sewer-gas with all its poisonous qualities. The pipe leading from the kitchen to this receptacle is usually straight, direct, and untrapped, except it may be feebly trapped in the sink. The ingress of the gas is free and unchecked; and were not the kitchen usually a large and airy room, and the sleeping apartments unconnected with it, the evil result would be more often seen.

A second general law relating to country home drainage may be thus stated. All cesspools and receptacles of house-waste must be placed at as great a distance from the house and well as the house lot will allow, and possess means of ventilation.

In many country and village homes, connected with which there is an incomplete system of sewerage, but no general water supply, the "tight" cesspool or tank system is in general use. This consists of a circular tank, its sides converging to a manhole at the top, built of hard brick with a brick bottom, cemented inside and out with hydraulic cement, so that it is perfectly water-tight, into which all the fluid refuse of the house is discharged. Its connection with the house is usually more carefully made than that of the leaching cesspool, but the danger is the same. From this tank leads a drain, which should be laid not

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less than a foot below the level of the inlet, and be turned downward within the tank by an elbow, until its mouth is at least eighteen inches beneath the water. This insures a seal from all trouble in this drain, or at its outlet. The water of this tank is discharged through this drain, either by an open mouth at some convenient distance from the house, or into some connecting sewer, or, by a system of tile drains, is used for irrigating and fertilizing land. The matter of the house-waste that is merely held in suspension is deposited at the bottom of the tank, whence it is removed once or twice yearly, as may be needed, and mingled with the compost heap or spread directly upon the land. This is the safest form of cesspool, as there is no contamination of the surrounding soil, no danger of the well being rendered impure, and there may be a perfect utilization of the waste. Its faults are those of the sewer system, and with proper ventilation is as unobjectionable.

Before leaving the question of the drainage of country and village homes a few words may be said concerning the management of the privy. Nothing can well be imagined more objectionable than some features of the present mode. It is well to have things handy, and hence the privy is never placed at an inconvenient distance from the house. There is no drainage; but after the place used for it is full, it simply is either cleaned out and mixed with the manure heap, buried deep in the ground, or carted off by some one who can make it pay. In the meantime the ground becomes thoroughly saturated with the filth, and the air is completely laden with its exhalations. There is commonly no drainage connected with it in any way, except so far as the leaching properties of the soil carry off the fluid portion. For this there seems to be but one remedy—the use of some other absorbent than the surrounding soil. This absorbent may be dried earth, sandy loam, sawdust, ashes, or anything that will perform the office. For the best work of this absorbent a tank should be provided, made water-tight in a manner similar to the tight cesspool, and every dejection should be immediately covered with a certain portion—a quart or more—of the absorbent. When this tank is cleaned its contents can be disposed of without offence or danger.

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A different set of factors present themselves in cities and towns in which there is an abundant public water supply, and a public system of sewerage. These factors are found in the multiplied water-pipes, waste-pipes, tanks, and water-closets on the one hand, and the entire absence of the contact of their contents with the atmosphere on the other. The waste and soil pipes are manufactories of disease-producing "germs," and the problem presented to the home-dweller is, so to perfect his drainage that no possible contamination can come to his household from them. The safe delivery of his kitchen waste is now of small moment compared with the greater and more extended danger in every room in the house, for not slops merely, but human excreta, are the matters to be provided for; and these, in connection with the discharges from washbowl and kitchen, form perfect material for the formation of the most pestilential gases. But the danger from these arise not so much within the walls of the house as from the general sewer system with which the house is connected. Unfortunately the householder cannot control that as perhaps he would like to, and his only way of safety is to assume that all the danger will arise from his own drain, and to take such measures in that as will insure his own freedom from injury.

It has been said that no drain should be laid at a less depth than three feet, but when the drain enters a sewer its depth must primarily be determined by the depth of that. In all proper systems of sewerage, however, the depth is sufficient for a third general law to be enunciated,—that every external drain should not commence at a less depth than eighteen inches below the cellar level. In light and comparatively porous soils the rain-fall soon settles away, and the depth of the external drain may not be compelled to follow this law; but in those soils that have a clay subsoil it is absolutely essential to health that no water should ever be permitted to reach the level of the cellar bottom. A series of tile drains may be laid, converging or connecting, entering into the external drain, but thoroughly protected by an efficient trap; or the trench in which the cellar wall is intended to be laid may be dug twelve or eighteen inches deeper than planned, and this extra space filled with cobble-stone; or, in houses already built, a drain may be dug about two feet from

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the wall, and to a depth of eighteen inches below the level of the cellar, leading to the cesspool, or to a lower place upon the lot, for discharge. In country homes, where the sewage tank is used, this cellar drain may enter directly into that, the same care being taken.

It is sometimes the practice to carry the sewage drain, with which are connected the waste and soil pipes, for some distance beneath the cellar floor, proposing by this to gain two points,—the concealment of the pipe and the draining of the cellar by the loose packing around it. Upon this point Bayles says: "The writer has seen such a drain, well laid with Scotch pipe and full cement joints, and covered with concrete of hydraulic cement on the cellar floor, giving off through this cement an amount of stench that made the cellar nauseous, even though the soil-pipe above was ventilated. . . . Cast-iron pipes, with leaded joints, well calked and painted, are safe, and unless subjected to such changes of temperature as might loosen the joints by contraction and expansion of length, will prove satisfactory for a long term of years. If iron is used there is seldom anything to be gained by burying it in the cellar or under the basement floor." Professor Parkes says: "It should be a strict rule that no drain-pipe of any kind should pass under a house. If there must be a pipe passing from front to back, or the reverse, it is much better to take it above the basement floor than underneath, and to have it exposed through its course." (Philbrick.) A pipe so carried is more full of danger than a street sewer of equal length, for its upper end is not usually trapped, its fall is slight, and it has no other escape for its gases than into the building. Recent experiments have shown the permeability of stone, brick, and unglazed tile to gases, and their utter unreliability so far as protection from sewer-gas is concerned. A piece of ordinary building sandstone, four inches thick, interposed between the divided ends of house gaspipe, transmitted sufficient gas through its pores to permit a burner to be lighted under the ordinary pressure of the mains. Brick walls and common plaster are much more permeable, and it will be readily seen that they oppose no real obstacle to the entrance of sewer-gas into buildings, or from room to room. Hence perfect safety, in those cases in which it becomes necessary

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to conduct a drain beneath a building, cannot be attained with these materials. With equable temperature and unvarying pressure there is comparative safety, but the sudden changing of these conditions brings danger.

The external drain having been entered into the street sewer, or the sewage tank, becomes thereby a part of the system, and, unless some obstacle be interposed, so does every waste-pipe that discharges into it. The obstacle is usually a "trap," which is formed by sinking the drain-pipe a portion of its length to a depth a little exceeding its diameter. This is constantly filled with the latest discharge from the waste-pipes, which is commonly of pure water, and thus is supposed to be effectually "sealed" against the odors and contaminations of the common sewers. Theoretically it should be effectual, but practically it is subject to the influence of factors which tend to destroy its efficiency. One of these factors is the tendency of water to absorb and transmit gases. The seal, having been undisturbed for a certain time, becomes saturated with the odors and gases from the sewer or cesspool, and in turn yields them up to all the waste-pipes that it was meant to protect. The waste-pipe seals are soon saturated, and then every washbowl, water-closet, and slop-hopper pour forth the poison. It is seldom, however, that the seals are unchanged long enough for this to take place, but it indicates one source and character of danger from the trap. A more important factor is the varying condition of the air in the sewers and in the house pipes. These conditions may be classed as three: (*a*), the ordinary condition, in which the variations are not enough to affect the trap injuriously; (*b*), a condition of greater or less compression; (*c*), a similar condition of tension.

It being always understood that a column of foul air exists between the waste-pipe trap and that of the external drain, and between this and the outlet of the sewer, compression may be caused by the pouring of hot water into the pipes, passing quickly into the sewer or the cesspool, (Monday mornings have been peculiarly noticed); by the forcible blowing of air into the sewers as in a gale, when the outlet is exposed; by the violent sweeping in of the tide, when the outlet is upon the harbor; by sudden

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changes of temperature in the surrounding air, or "from the influx of a considerable volume of water into the column from above forcibly displacing an equivalent volume of air." "When compressed from any of the above causes the foul air is blown out into the houses at the orifice of some waste-pipe in connection in spite of its trap.

"Tension may occur from the reduction of temperature, or from the afflux of water as it leaves the confined column through the outside trap. In either case the vacuum is supplied by sucking the water out of some of the connecting traps, leaving their waste-pipes unsealed." (Philbrick.)

A sudden and violent rainfall, filling the sewers and lessening the air space within them, exerts a compression force of at least fifteen pounds to the square inch, while no usual water-trap can resist a force of more than one pound to the inch. As such storms commonly cease with the same suddenness with which they commence, the rapid subsidence and afflux of so great a body of water exerts sufficient tension to withdraw the seal and leave the house unprotected. The sewer stench is a complaint after such storms, and the insecurity of the trap is made plainly evident. Various forms of waste-pipe traps have been devised to meet these difficulties, but of all those examined none seem to be perfect. The idea is that of a valve-seal, either after the model of the "pan-closet" or of the ball-valve. These are more effectual than the water-seal against the compression, but are just as subject to tension. Their use is advisable as lessening the danger, but they need watchfulness and care.

The remedy for all this is simple, practical, and under the majority of conditions, effectual. It is perfect ventilation of the external drain. The gases which are the products of decomposition are singularly light in their composition, always have a tendency to ascend, and are governed in the force and rapidity of their ascension by heat. Hence they will be found mostly in the highest portions of the waste-pipe, and to escape most freely in the upper rooms of the house. No efficient and practical method of ventilating the main sewers has yet been devised, and the necessity of self-protection rests with every householder. This ventilation may be obtained by means of a pipe passing

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from the drain to above the roof of the house, with which every waste-pipe and every soil-pipe in the house can be connected. In no case should this ventilator be less than two inches in diameter, and more commonly it should be three or more. Its position in the house should be such that it can receive the warmth, that its ascending current may be assured. The branch ventilators should start from the wastes just below their seals, and be nearly of the same diameter as the waste itself. The soil-pipe should have a perfectly free opening into it, starting from the upper bend of its trap. The results gained by this system of ventilation are: a free escape for the gaseous products of decomposition and their oxidation in the upper air; their non-absorption by the water-seals, and a movable column of air, which will so yield as not to be injuriously affected by the varying conditions of compression and tension within or without. Homes situated upon high land, and connected with sewers, especially need this precaution, for all the gases of the lower sewers will tend to the higher, and houses so situated are consequently more exposed to their contaminating influences.

The fourth principle of home drainage evolved is: all drains should be efficiently trapped and connected with all their dependencies with a ventilating pipe whose outlet should be above the highest point of the house.

The questions of the internal plumbing arrangements of the house, or of the disposal of the sewage, do not come within the scope of this paper, but for the health of both individuals and cities they should be thoroughly understood.

This paper cannot be better closed than in the words of Colonel Waring:

"The individual householder has these problems to solve:

"1. To secure his house against excessive damp in its walls, in its cellar, and, where practicable, in its surrounding atmosphere.

"2. To provide for the perfect and instant removal of all manner of fluid or semi-fluid organic wastes.

"3. To supply a sufficient amount of pure water for domestic use.

"4. To guard against the evils arising from the decomposition of organic matter in or under his house.

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"5. To remove all sources of offence or danger which may affect the atmosphere about the house.

"6. To prevent the insidious entrance into the house through communications with the sewer, cesspool, or vault, of poisonous gases resulting from the decomposition of the refuse of his own household, or of other households with which a common sewer or drain may bring him into communication."

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XVI.

THE WATER SUPPLY OF CITIES AND TOWNS.

By A. R. Wright, M.D., Buffalo, N. Y.

There are two ways in which human health may he endangered by sewage, cesspools, and other surface impurities. One is by breathing the air contaminated through them, which will be ably treated by other members of this bureau; the other is by using for potable purposes the water polluted by them. In this brief paper we shall simply refer to a few cases of the bad effect of such water. Nor do we propose to prove the kind or character of the pollution (the recently published analyses give the dangerous amounts of chlorine, salt, albuminoid ammonia, etc.), and only briefly to show the channel of ingress to the well; the principal object of the paper being to produce evidence of the *fact* of pollution, and to show the only means any town has of avoiding its dangerous effects. We will not weary your patience, or assume your ignorance, on the subject by rehashing all the mass of material that has been written on well-waters during the last few years. The subject has been pretty well exhausted, though it is not a dry one.

In most of our cities and towns the probability of the pollution of all wells is so great that in any given case we cannot depend on the purity of the water; hence, to fully appreciate the importance of our investigation, it may be well here to quote, briefly, from a few of the latest authorities. Liebermeister, *On the Infection of Typhoid Fever*, says: "To unprejudiced minds there can be no doubt of the frequent occurrence of infection from drinking-water. . . . . It is not going too far if we assert

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that the infection from drinking-water can be more clearly proven than the infection from the air." Wagner, in *Manual of General Pathology*, says: "They," the impurities of drinking-water, "produce principally gastric and intestinal diseases." Parkes, in *Public Hygiene*, 1878, page 47, *et seq.*, gives twenty to thirty localities in which outbreaks of typhoid fever and related diseases were traced to polluted drinking-water. Professor Lattemore, of Rochester University, in an official report of the water supply of the city of Rochester, says: "Here are fifty cases of typhoid fever, or closely related disease, reported by the attendant physicians to the board of health. *All of these patients, except two, used well-water.* In all these forty wells examined, with but *one* exception, the quantity of salt exceeded five grains per gallon. I may add that the results of this investigation are perfectly accordant with my experience for a number of years past in the analysis of many well-waters for physicians who have suspected them as the cause of typhoid fever and other diseases." In continuing, he says: "Since the publication of the above report a very large number of cases, both in this as well as in other cities, have been communicated to me, very strongly confirmatory of the conclusions drawn from this investigation as to the frequency of contamination of well-water by sewage, and as to the direct origin of typhoid fever from the use of such water." He then cites a number of cases, one of which is the city of Lynn, Mass., where out of fifty cases of typhoid fever which were investigated, it was found that in forty-two cases the patients habitually used well-water. The water of eighteen of these wells was proved by chemical examination to be contaminated by drainage from privies.

Dr. Van de Warker, in last February number of *Popular Science Monthly*, on "typhoid fever poison" infecting twenty persons through drinking water from a well contaminated by overflow of a privy vault, says: "Thus, to sum up, all the families that were supplied from the Schmidt well (the infected one), after the 20th of September, had one or more members attacked by the fever; all the families that were furnished with water from other sources escaped." . . . . Dr. A. R. Davidson in a paper read June, 1879, before the Buffalo Medical Association on "The

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Sanitary Chemistry of Water," says of Buffalo: "During the past year the deaths in the Fifth, Sixth, and Seventh wards were eight hundred and eighty-six, nearly half of the total of the entire thirteen wards of the city. I have examined ten wells in that portion of the town and find every one of them more or less contaminated, and some of them horribly so."

To condemn the shallow well, it is only necessary to refer to the observation of engineers, that on the construction of deep sewers all the shallow wells in the vicinity have been drained, thus showing that the wells had been receptacles of sewage and surface drainage. The Rivers' Pollution Commission of England, after examining 412 shallow wells, speak of water obtained from them as less fit for human consumption and more dangerous to the public health than the water of sewage-polluted rivers. But the deep well (not artesian) is liable to just as great pollution, and perhaps as general as the shallow one. According to the character of the soil, the condition of the sewers and surface drainage, the channel of pollution to the deep well varies. If the subterranean stream that supplies the deep well becomes polluted, the well-water cannot be better than its supply, and must be polluted also. My attention was called to this subject principally on learning last winter from the engineer's office of a city of 140,000 inhabitants, that it is not an uncommon occurrence in that city, on opening an old sewer over a sandy subsoil, to find a break in the bottom of the sewer, allowing most of the sewage to run into the soil beneath. Naturally and inevitably this great leak of sewage found its way to the first subterranean stream, and this stream feeds the deep well, whether that well be ten rods or one mile distant. The most alarming fact in connection with such breaks is that there is no probability of discovering them until the accidental opening of the sewer; hence it may feed the well with pollution for years before discovery. Professor Lattemore, in the report above alluded to, says: "Our so-called sewers, which, instead of being, as they should be, impervious tubes, are simply covered ditches, from which their contents may escape almost as freely as they enter, some in their passage through our porous soil, as distributing mains, filling to their own level the wells, often for great distances, on each side

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of their course." Dr. C. F. Chandler, of the School of Mines, New York, and ex-President of the New York Board of Health, in a report to the American Public Health Association on water supply of cities, says: "Well-water becomes contaminated with filtered sewage matters, which, while they hardly affect the *taste* or *smell* of the water, have, nevertheless, the power to create the most deadly disturbance in the persons who use the waters." Wagner, on *Impurities of Drinking-water from Pump-wells*, says: "Boiling does not much improve such water. These impurities reach the drinking-water mainly through sewage water, which filters down to the wells." My attention having been called to the fact of breaks in the bottoms of sewers being a probable means of pollution of well-water in many cases, I wrote to the different engineers of the large towns and cities of New York State, making inquiries on the subject, and the following are extracts from a few of the replies:

Buffalo.—"As to our public sewers, I have frequently found the inverts or bottoms of brick ones washed out entirely at different points; and, if this occurs in a porous soil within the area of a well-supply, it is my opinion that the water of the latter would be contaminated. The soil around brick sewers is very generally found blackened by the sewage working through the open joints, which should not take place in a properly built sewer; and I mention the fact to show that there are evidences of outflow from such sewers. It is also possible where a poorly constructed sewer and a well are in close proximity, for the street washings to percolate into the well, thus adding their defilement."

Lockport.—"Our system of sewerage is far from perfect. The principal duty of the few sewers we have is to carry off the fluids discharged into them, without much question how they are disposed of."

Auburn.—"Our sewerage is very defective, but we are favored by the conformation and nature of the ground. Our sewers have mostly been constructed of stone, and are consequently broken at all points."

Syracuse.—"In constructing a trench sewer, 5 or 6 inches in diameter, and 7000 feet long, wells along the sewer and above

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the bottom of the trench were affected more or less, some being entirely drained. Unquestionably, there is a soakage or drainage from almost any sewer to a certain extent. The character of the soil and surroundings would be an important factor in considering its effect."

Newburgh.—"I have not discovered more than three breaks in old sewers in the course of a year, where the matter was saturating the surrounding earth. They had probably existed two or three years, perhaps longer. We suffer most from old stone drains laid years ago, whose existence is only discovered by their breaking out in the street, or in some one's cellar."

Poughkeepsie.—"Whenever I have had occasion to take up old lines, I have always found the ground beneath clogged with matter from the sewer. This fact, in connection with the one that the level of wells was not permanently affected, led me to abandon the practice of leaving open joints, as I was convinced that the wells, and any excavation below sewer grade, must be contaminated by leakage. The water of wells showed a contamination by animal matter. One thing I am fully persuaded of, that is, in no city should wells be permitted for family use. And I hope your efforts may have the effect of causing such legislation, and of empowering local boards of health to close up all now in use, and check their further construction."

Schenectady.—"Would say that, to our disgrace, we have no sewers in this city; and, therefore, there is no answer to make to your inquiries. Our wells are all affected more or less by water filtrated through a soil charged with *two centuries* of sewage, privy, and stable deposits. Most of our inhabitants have made cesspools of their wells, and use water introduced by the Holly Water-works from the Mohawk River."

Elmira.—"Analyses of a number of wells here show various impurities, and particularly those in the vicinity of abandoned graveyards now in the heart of the city; also near our present cemeteries, where there are no sewers. Our board of health came to the conclusion as diphtheria was most serious in these localities, it was owing to the above cause."

Oswego.—"Our city is a side-hill city with a river running through the centre, but few sewers constructed, no breaks dis-

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covered. But little attention is paid to sewers, the gutters being the receptacle of most of the drainage from houses and lots."

The interesting answer from Rochester is given above in a quotation from Professor Lattemore's report. R. M. Harbrouck, city engineer of Troy, thinks the solid matter in the sewage would plug up a break, and thus prevent the escape of sewage through the bottom.

I have alluded to this channel of well-pollution through the bottoms of sewers as one that has not received from engineers the attention which the gravity of the conditions demands. The pollution of well-water from sewers, surface drainage, cesspools, manufactories, etc., is so generally known to those who have investigated the subject, that it is only necessary to refer to a few quotations from recent authorities who are generally considered as experts. A dangerous quality of such polluted water is that it is generally cool, sparkling, clear, and sweet, so that the innocent ones who drink it boast of their cool delicious beverage, so much better than any common hydrant-water. Professor Lattemore in his report of 1878, says: "One point, however, is demonstrated,—typhoid fever *does* prevail among those using these waters (the forty wells examined), and these waters are all bad except perhaps one, so bad that I can only characterize most of them as vile and dangerous. Nevertheless, several of them possess no bad odor or taste, and are clear and sparkling."*

Professor H. B. Cornwall, of Princeton College, in a report to the New Jersey Board of Health, 1878, on "Springs, Wells, and Cisterns as Sources of Drinking-water," says: "There is no escape from the conclusion, that so long as our present convenient systems of water-closets, drains, cesspools, and ill-arranged vaults is allowed, so long danger exists in every well in crowded towns."

Dr. Davidson, in the paper above alluded to, says: "How are such waters hurtful to those who use them? It requires no

* In a letter to the writer, May 20th, 1879, Professor L. says: "My own studies of this subject convince me that it is difficult to exaggerate the unfitness of well-water for domestic use in cities and villages."

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argument to convince a man that he ought not to drink a water polluted with urine and indescribable filth, as some of these waters are, the analyses of which I have shown you this evening. . . . The result of my analyses made during the last year or two shows, however, that some of them are filled with water that has percolated through foul, filth-reeking soil."

Dr. Chandler, in the report above quoted from, says in concluding: "I would say that from the facts which I have presented, it is evident that wells are always to be viewed with suspicion as sources of water supply, on account of the danger of contamination from the drainage of the soil about dwellings, and of the leakage from drains, cesspools, and privy vaults. Tubes or driven wells are little better than open wells."

From a table in the sixth report of the Rivers' Pollution Commission, 1874, it appears that deep well-water contains twice the amount of solid impurities of any other water.

Professor Kellicott, of the New York State Normal School at Buffalo, after analyses of nine Buffalo wells, writes as follows: "The wells of our city are no better as a genus than those of other cities; they are undeniably bad, and their use should be discouraged. I have examined wells of all ages and conditions, and a comparison of results convinces me that it is useless to try to keep pollution out of a city well by depth, by cement, hard tile, or any other device. If water from the surface gets into the well, pollution goes with it, through gravel, sand, or clay."

Dr. Stevens, of Indianapolis, in a report on public hygiene to the American Medical Association, 1878, says: "Wells should be banished; yet they are the principal sources of supply of potable water to all the State."

These quotations ought to be considered sufficient, though equally strong ones might be continued *ad libitum*.

In studying this subject it has appeared to me that its importance cannot be overestimated, when we consider that an unhealthy water supply is dangerous, not only as a drink, but as it affects every meat and vegetable cooked in it, the bread, and the after-dinner pudding or pie; indeed, as you will readily perceive, all solid impurities are retained in the edible as in a

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filter, while the pure water passes off in vapor, and the stomach is obliged to take the impurities with the food. But you may ask, If we close the wells, can we get any better supply? We may answer quite confidently in the affirmative. I think we are safe in estimating that nearly, if not all, our large towns and cities may be supplied with a wholesome water from lakes, as Buffalo, Rochester, Chicago, etc., are, or from rivers, as New York, Philadelphia, Cincinnati, Louisville, etc. If the river be impure from solid matters, put adequate filters in the channel of water supply, as is done in England in the water supply for Carlisle, York, Leeds, Chester, Cardiff, and Exeter.* To give an indication of the comparative purity of wells and a good water supply, we refer to the fact that the waters of the forty Rochester wells mentioned above averaged 16.78 grains of salt to the gallon, while the Hemlock Lake water gave only *a trace.* It will be remembered that 5 grains of salt to the gallon is the utmost limit for safety in a well-water. Professor Kellicott's analyses of six ordinary wells of Buffalo shows an average of more than 9 grains of chlorine to the gallon; Niagara water supply giving .375, Nashville 1.75 to 2, Thames supply for London 1.2. Almost any town in this country can obtain a good water supply by going the distance of 28 or 30 miles, as New York and Rochester do, or by pumping from lake or river as many other cities do. If a river be used for the water supply of a city, sewage along its banks should be cut off; and if there be solid impurities, the filtering should be adequate and in the main channel of supply, *not,* for obvious reasons, left for the individual consumer to use at discretion. We might here state that scientific men who have examined the ordinary filters in use generally condemn them as worse than useless. They are endeavoring to find something of value to replace them.

In conclusion, I think I may with propriety appeal to you, as conservators of the public health, to use your influence in all large towns and cities toward securing a good general water

* Some of the most practical scientists of England declare that the Thames water, which has been so severely condemned, may be made perfectly wholesome by excluding the sewage and filtering perfectly.

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supply, and for closing up all wells for potable purposes as soon thereafter as the city ordinances will allow it to be done. Some may reply, Let us wait till we have more statistics. Are not thirty or forty cases in which outbreaks of fatal disease have been unmistakably traced to the use of clear, sparkling, inodorous water, enough to incite us to immediate action in taking preventive measures? By waiting till we have examples in every city or town, hundreds or thousands may be added to the list of unsuspecting victims of the apparently harmless poison.

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XVII.

OUR RELATIONS TO BOARDS OF HEALTH.

By J. P. Dake, M.D., Nashville, Tenn.

The policy of our brethren of the old school in the organization and management of boards of health has been such,—regarding them as medical bodies amenable to their code of medical ethics, and therefore as entirely foreign to men of our school,—that we were, for some time, kept in an attitude of opposition to them. But, in the progress of public hygiene, experience taught the value of lay representation on such boards, especially in Great Britain and in some of the older States in our Union. And physicians, practicing under the homœopathic law, accustomed to a closer attention to individual hygiene than was ordinarily bestowed by other practitioners, gaining the confidence of governmental bodies and public officials, have been placed upon them.

Though stubborn the professional opposition, and sometimes disgraceful the manners shown by the allopathic fraternity upon our entering this branch of public service, it is gratifying to know that we have the approval of the press and the people of the country. From the time when Dr. Cox was expelled from the old-school medical association in Washington for acting on the Board of Health for the District of Columbia with Dr. Verdi, down to the hour when he was placed upon the National Board by the President and Senate, the tide of popular favor has been on our side. As such boards are not now made up exclusively of allopathic physicians, and as they are not governed by the

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narrow code of any medical sect, it is no compromise, either of dignity or principle, for us to accept positions on them, or to tender our earnest support. Made up of practitioners of different medical views, and of liberal-minded laymen, scientists, and philanthropists, they are of and from the people, and well calculated to do good work for the people.

Such being the recognized character of the boards in question, and in view of their great usefulness, so well set forth in the paper read by Dr. Verdi, our duty, as medical men, in reference to them becomes plain. We owe it to the cause we advocate, as well as to the people who look to us for sanitary as well as medical advice, to see that they are properly represented in this branch of public service.

Where homœopathy is strong, and its adherents numerous and influential, a demand should be made for one or more of its practitioners upon each board; and where it is as yet comparatively weak, an effort should be made to secure one or two well-qualified laymen as members, so as to change the character of the body, making it such that medical men or laymen, of all creeds and schools, may come to it with suggestions and aid without reserve or hesitation. In Tennessee at first we had a State board made up of allopathic physicians alone. The first and only manifesto submitted in a formal manner to the people of the State by that board was in regard to the prevention of scarlet fever, with a special denunciation of Belladonna as a prophylactic. The character of the board being so entirely partisan, nothing remained but for us to address the people on the subject, calling in question the data and the logic of the medical public functionaries. With homœopathy well established in only the leading cities of Tennessee, we could not well ask for the appointment of one of our number upon the State board; but, when the legislature assembled again, I suggested an amendment to the law creating that board, and had the satisfaction of seeing it adopted, providing for the appointment of two laymen, one a representative of the mercantile and the other of the transportation interests of the State. As soon as the lay members were designated by the governor I made haste to announce, in the leading paper of the State, the important change in the character

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of the board, making it a sanitary in place of a medical body, to be approached freely by citizens of all shades of medical belief without fear or prejudice. Upon the reorganization of the board the secretary called upon me for a list of our practitioners in the State, and from that time we have been called upon for suggestions and co-operation equally with all other recognized medical men. I speak of our experience in Tennessee simply to show what may be done toward opening the way for a sensible and practical co-operation in States where we are not yet numerically strong enough to demand a formal representation.

By a little well-directed effort we may soon have our share of public service, and our proper influence in the direction of sanitary work for the people at large.

Let each one give heed to these matters, and the time will soon come when those hitherto taunting us with holding to "an exclusive dogma" will find us, in spite of *their exclusive code*, at their side in every good effort in behalf of the public health.

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XVIII.

OBSERVATIONS ON SOME OF THE IMPROVEMENTS IN HOUSE AND CITY DRAINAGE.

By Bushrod W. James, M.D., Philadelphia, Pa.

Wherever there are sewers with but slight incline, noxious emanations are certain to be evolved, and from the sewers connected with our residences more or less of these gases will escape into our houses, or finding their way out through inlets and ventilators will contaminate the air of the city unless precautionary measures are adopted.

I. *Destruction of the Poisonous Products.*—Many plans have been suggested to prevent this result, and a few of the more recent ones we propose to briefly notice. From letters received from the boards of health of many cities in different parts of our country various points of interest occur, and to a sanitarian it is curious to note how illy adapted the drainage system of one place is to another. For example, take a locality like Pensacola, where several streams course through the town, largely diluting and rapidly carrying away the sewage before decomposition takes place; or New Orleans, where the river surface is above the town level, and where water carriage is certainly the best method and should be utilized to its fullest extent; or Memphis, where a greater part of the town runs back and down, below the river level, we see that water carriage is absolutely essential.

But in dry places, such as Paola, Kansas, or some towns in Utah Territory, where sometimes no rain falls for eight or eleven months of the year, and where the soil is so porous and dry that

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the earth dispenses quickly from the surface with all the drainage from houses, and in many other towns in the far West, where the dry and wet seasons prevail, they do not require, and could not have if they desired it, the same system that we have in operation in our large Eastern cities. Then, again, the relative humidity for a great portion of the year is so small that everything like poisonous emanations are dried out.

The soil has even to be irrigated to produce vegetation and obtain crops of grain, vegetables, and fruits, and all the sewage that is passing from a town can be readily utilized upon the soil a distance away without producing injury to the inhabitants.

Again, a city mainly located on a hillside, like Wheeling, Virginia, Montgomery, Alabama, Cincinnati, Allegheny City, or Quebec, does not need the same kind of precautions in sewer building that a city located on a prairie, like Chicago, would have to exercise. In the hill-towns surface water and rains rapidly flush out the sewers, but in a low-lying town it is more sluggish and more likely to generate poisonous gases by reason of decomposition. Hence the occasional flushing of the hillside sewers will answer, while a constant, good, copious water-flow is needed through those of the low-lying towns.

The destruction of the poisonous principles of sewer-gases by burning them in the street-lamps, as suggested by Dr. S. J. Corbett, of Los Angeles, California, and other methods will now be considered. This plan consists in making use of the ordinary gas-lamps of the street, having pipes connected not only with the gas-main but also with the sewers, the cap being so fixed that the illuminating and sewer-gas pipes can both be opened at the same time; and as soon as the lamp is lighted the flame draws the sewer-gases upwards to the jet, where all the poisonous principles they contain are consumed as they escape. He connects a 2½-inch tube to the top of the sewer and carries it through the lamp-post to the gas-jet of the street-lamp, all the street-lamps in the city being utilized in this way. The lighting of the gas acts like an air-pump, and draws the gases up out of the sewer, thus ventilating the latter.

The inventor of this system claims that this ventilation during the night is sufficient to remove the pressure of confined gases

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in the sewers, and the day period of the twenty-four hours is not sufficiently long to allow of any dangerous amount of these gases to be generated, so that the destruction of the germs of disease, which the gases carry, is insured by the consuming process without any additional expense beyond the original one of pipes and pipe-laying and fitting. My opinion is, however, that some of the jets should burn all day. In confirmation of the value of this method I submit the testimony of a sanitary expert as follows, containing his views and report of the results obtained in experimenting with sewer-gases. The experiment was made by Professor Davidson at San Francisco, February, 1878. He says: "I have witnessed and am cognizant of certain experiments made in this city with a method for destroying the deleterious effects of sewer-gas. The experiments were mostly made at my suggestion, and so far they have shown the following result:

"1. That the sewer-gas carries with it the germs of disease.

"2. The disease-germs are destroyed by burning.

"3. The means which I have examined are applicable to street gas-lamps.

"4. The photometric value of the light is so little affected that the change cannot be detected except possibly by rigid photometric experiments. The method proposed is that patented by S. J. Corbett, and consists in burning the sewer-gas brought in contact with the gas-flame. I witnessed the operation several times some months since."

The germs are subjected to the heat of the flame and their vitality destroyed, whilst the offensive odor accompanying sewer-gas is also destroyed. As part of the experiments I may mention that glycerined glass plates were exposed in the sewer near the Palace Hotel where the exhausted stream enters the sewer, and yet the following results were obtained by two microscopists.

Examined soon after the washing was made, a sedimentary deposit of vegetable fibres and other matters was noticeable to the unaided vision.

Drops placed under a microscope, with an amplification of from 300 to 1300 diameters, were found to contain vegetable cell-structures, spiral ducts, and fungous spores.

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Bacteria, one of the earliest vegetable forms appearing in decaying and putrefying animal and vegetable solutions, and by many regarded as the cause of putrefaction and zymotic diseases, were found in large numbers.

Spirilla were also discovered, but not plentifully. A growing fungus, somewhat arborescent in form and answering to Torula, seen in decomposing urine, was found in many instances, the filamentous mycelium spreading in all directions.

Monad-like forms were plentiful, which were probably the zoospores of some of the lower algæ, and a few spiral filaments answering to the description of gyrocerus of genus Torula were found. These forms are all found in decomposing and fermenting solutions and matters, and their presence would seem to prove that the gases arising from our sewers are laden with the seeds of disease and death, and to such an extent as to contaminate and corrupt the purest air and water.

Without doubt diphtheria and other diseases of a malarial character would be lessened by the destruction of such germs as are known to be their cause, and it would seem proven from this and other tests made, that our sewer-gas should be made a point on which a vigorous attack should be maintained It may be remarked that one method of disinfecting sewers has been to send steam through them, yet here, where the steam had a fair field, the results exhibit its insufficiency.

Other similarly prepared microscopic plates, exposed to the sewer-gas from the drain-pipe of the Grand Hotel, gave nearly similar results.

Dr. Wyeth, the microscopist, furnished a drawing which exhibited a large number of foreign objects, among which he enumerated fibres of cotton, vegetable débris, sand, charcoal, etc., growing fungi, bacteria, eggs of insects, etc. It was not practicable to make, without much trouble and inconvenience, exhaustive photometric experiments, but the indications obtained satisfy me that the change of illumination is very small, and one observer reports it, wholly unappreciable. Although I am convinced that the results are satisfactory, yet, to satisfy others, it would appear proper to have a full series of observations and

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experiments made upon some of the city lamps and sewers by the city authorities, under the direction of competent persons.

Another method of burning sewer gases that enter house pipes is the one invented by Mr. A. W. Rand, of Philadelphia, called a "perfect ventilator and sewer-gas cremator." He places a hot-air back in immediate connection with the fire in the kitchen range, stoye, fireplace, or furnace, in place of or alongside of the "water-back" for heating water, now coming into general use. This hot-air back is constantly heated, by means of the fire in the range or furnace, to quite a high temperature (400° Fahr. is claimed), and as cooking ranges are constantly in use in almost every house of size in cities, this chamber is thus kept heated. A ventilating pipe extends into this hot-air back at its lowest part, and comes from the soil pipe, or at some suitable point from the waste-pipes, as the case may require. From the hot-air back extends another pipe leading directly up the chimney; then an opening is made at the highest point of the waste-pipes to supply fresh air for the draught. When the range is heated the atmosphere that is contained in the hot-air pipe is heated and ascends, and as it goes up the sewer gases and atmosphere of the waste and soil pipes are drawn into this chamber; the impurities, it is claimed, are destroyed by the heat to which they are subjected in the hot-air chamber and pipe, and then ascend to the outer air. This system maintains a constant suction of the sewer-gas and atmosphere from the pipes, and thus keeps up a good ventilation of them. This is a patented process recently brought out.

Mr. T. B. Belfield, a brass-founder in Philadelphia, has adopted in his residence an idea of his own to get rid of the gases, upon a cheaper plan and by a mode which, in all probability, destroys the poisonous gases that arise into the pipes connected with the sewer, either directly or indirectly. He has removed the traps from his basin-wastes, etc., and connected the main under-drain pipe with a large pipe which passes up into the chimney leading from the range, and by means of this iron pipe extending through the chimney to its top, he obtains a constant suction from the waste-pipes from every part of his house. It acts upon the principle that heated air always ascends, and this

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method, he claims, draws the air down through the waste-pipes into the main pipe (that leads to the sewer), and along it, back to the heated pipe that ascends through the chimney and thence to the outer air. He has but recently adopted it, and thus far it has worked admirably, no indications of sewer-gas being present, or having escaped in the rooms since its adoption.

Another method of using fire as a sanitary agent is not to allow the waste products of the cities and houses to enter the sewers at all, but to collect and commit them to the flames in vast cremation furnaces, located at accessible points near the city.

The collection of the fecal and urinary material in dry-earth closets, and removed daily, would prove of incalculable benefit as a sanitary measure; but it has the disadvantage of being difficult of accomplishment and very expensive, so that large cities will not adopt it, though answering very well in towns and villages; but, all in all, it is too expensive for the practical and money-loving American to adopt.

II. *Ventilation of the Sewer itself, and Disinfection.*—1. The removal of the gases from the sewers: This may be effected in various ways. One is the pneumatic system, by which fresh air is forced or drawn into the sewer, the foul air being thus diluted and driven out. Blowers, exhausting-fans, furnaces, etc., have been used and have proven failures.

Another method of ventilating is to have the sewer so constructed as to prevent the gases from travelling from sewer to sewer, or their branches, and then attaching a certain number of chimneys to each sewer, so that the warm sewer air will ascend through these ventilating chimneys in preference to the small orifices that extend to the drains of houses; and especially certain will this object be accomplished if the proper traps are attached to these house drains, to seal them against the influx of sewer-gas, and adding the additional precaution of a ventilating pipe for these drains, as well as one for the water-closet emanations. The manner of preventing sewer-gas from being transferred from sewer to sewer, or district to district, is to allow a part of the fall to occur at each ventilator or manhole, breaking the sewer into a series of steps or sections, thus aiding and, as far as possible, compelling the gases to ascend to the atmosphere,

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there to become diluted and rendered innoxious; for, doubtless, ample dilution and oxidation removes the disease-producing agency from the gases, and on this principle some smaller elevated towns have nothing but surface drainage, and are comparatively healthy places.

James C. Bayles, in his work on house-drainage, published in 1878, claims that the simplest method is the best, and suggests that the covers of the various manholes consist of strong open grating instead of tight covers, the ice, mud, etc., to be kept removed from the perforated coverings from time to time if they become choked. This being done, each under-drained house having a ventilating pipe attached to the soil pipe, and carried above the roof without having any trap attached to it, would attain the object desired in ventilating the sewers effectually, and but little or no sewer-gas could escape into our under-drained houses.

2. Disinfection and deodorization: Deodorization is useless unless it embraces disinfection.

Scientific men differ widely as to the value of disinfectants for this purpose, and as their action is only temporary, and the factors of sewer-gas are always at work, night and day, in almost all the present sewer systems in this country, it certainly is one which requires constant watchfulness and considerable outlay all the time. Among the agents in use we will name several of the best. Charcoal has been used to absorb sewer-gas, as well as to destroy the poisonous properties of the gases; this agent has the property of attracting the impure ingredients of the atmosphere of the sewers, in which it may be placed in sufficient quantities. The explanation of how this is accomplished is supposed to be as follows: Charcoal, as is well known, is naturally very porous, and the pores, which it is claimed are filled with oxygen condensed to eight times its bulk, give out this oxygen; when coming in contact with organic matter, this consumes the noxious principles in the gases by oxidation; the carbon reabsorbs oxygen from the atmosphere, and is thus enabled to quietly continue the process of burning out or oxidizing impurities from organic matter in sewer-gas. A solution of copperas has been used, carbolic acid in various ways, quicklime, chloride of lime, etc.

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They must, however, be used in definite quantities to a definite amount of the material to be disinfected; and while they may not be generally used to disinfect the sewage of a large city or town, yet they are very useful where certain localities have become saturated with obnoxious and poisonous exhalations. Lime, owing to its bulk and the difficulty of applying it in large quantities to sewers, is not considered practicable on an extended scale. Various other solid and liquid agents, such as liquid Sulphurous acid, have been used to oxidize sewer air, but the results have not been very encouraging. Carbide of iron is an agent better adapted to this use than lime, but its expense and difficulty of application have prevented its adoption for use in this country. Chlorine gas has been recommended for the destruction of the noxious properties of sewer gases, the generators of the gas to be located so that the chlorine can come in contact with the sewer gases as they escape through the ventilating chimneys.

I. W. Bowen, M.D., of Fort Wayne, Ind., suggests as a cheap mode of ventilating vaults, foul cellars, etc., a funnel-shaped piece of tin hung in the cellar, with the open wide end down, and with a rubber tube extending from the upper end of the funnel to the roof or to the outer air. It is in use in Fort Wayne, and works well in carrying off foul air.

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XIX.

BLAKE'S MAXIMS CONCERNING SEWER GASES.

By Bushrod W. James, M.D., Philadelphia.

Dr. Edward T. Blake, M.R.C.S., England, has summed up the main points on the subject of "sewer poisoning, its causes and cure," and covers the ground well without further elaboration, in a series of maxims, which are of special interest to us on this side of the Atlantic, as sanitarians. He says:

Ventilation.

1. Cold sewer-gas is probably heavier than atmospheric air.
2. Hot sewer-gas is lighter than cold air.
3. Sewer-gas is drawn up by a heated house, and carried up by heated air.
4. Sewer-gas is pushed up by displacement, as in a thunder-storm.
5. Bell-traps and bends are of no use without ventilation to keep out sewer-gas, bell-traps being frequently forced, siphons being subject to so-called suction.
6. Siphons, also, are prone, especially at night, to absorb sewer-gas, and to deliver it during a rise of temperature, on the opposite side towards the house.
7. No pipe, excepting soil pipe and ventilator, should have any immediate communication with the sewage system.

Connection.

8. Sewer pipes should consist of glazed stoneware, terra-cotta, or of some such non-absorbent, non-metallic mineral.

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9. The pipes should be socketed with Stanford's patent joint (Doulton & Co.), or at least with cemented joints, calked or propped, to prevent dropping. Clay puddle-joints are quite inadmissible; they let gas sewage out and let sand in.

10. Lead and brickwork are bad for traps, sewers, or water connection.

11. Fall should not be less than one in sixty.

12. All new house sewers should be laid by the sanitary authority. Certainly all connections should be made by them.

13. Every kind of pipe should be readily accessible.

14. Soil pipes should be outside the house and open at both ends.

15. In towns back sewers are to be advocated.

16. On no account should any kind of drain or sewer pass under a house. If inevitable, an arch should be turned over each pipe wherever it may pierce a wall.

17. Most sewers are too large; most drain-pipes are too small.

18. Storm-water should not be carried by the same system of pipes as sewage.

19. When water conduits travel with sewer pipes, the former should lie on a higher plane.

20. Lead should not be employed for water connection.

21. The purer the water, the greater the danger of using lead.

22. It is better not to employ lead at all inside a house.

23. Drainage-pipes should not be carried near a house in friable soil.

24. If there be rats in a house there is certainly something wrong with the sewage system.

STORAGE.

25. Lead should not be used for storage of drinking or cooking water.

26. Best tanks for water storage are slant-sided (to lessen risk of frost fracture), and composed of slate, of glazed stoneware, of terra-cotta, or of iron, enamelled or galvanized. These should always be open to light and air.

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27. Closet cistern-water is unfit for drinking purposes.

28. Shallow wells should be railed in to exclude animals which deposit ova of tapeworm and other parasites.

29. All wells should be cemented inside and surrounded by a water-tight wall to exclude surface water, etc.

30. Wells are objectionable in porous formations, and only tolerable in virgin soils.

31. All cesspools should be water-tight.

32. Ingress pipes should, unless ventilated, be at base of cess.

33. Cesses should be ventilated at the highest point.

34. Cess should be emptied daily from lowest point by chain-pump.

35. Cesses should be as far as possible from wells, and never on a higher level.

36. Let no person rent a house without a certificate of its sanitary condition from the medical officer of health.

37. No building to be erected on any site which has been filled up with material impregnated with fecal matter, or with any animal or vegetable refuse.

38. The whole ground surface or site of every new dwelling-house should be properly asphalted, or covered with a layer of good cement concrete, at least six inches thick, to keep down rising damp.

39. Every wall of every house should have a proper damp-proof course of either glazed stoneware, or terra-cotta air tiles, sheet lead, asphalt, or slates, laid in cement, beneath the lowest timbers, and not less than six inches above the ground adjoining such wall.

40. A dry area should be constructed around every house where there are rooms in the basement.

41. The subsoil of the site of every house should be drained with earthenware open-jointed field pipes whenever the dampness of the site renders this precaution necessary. Such pipes not to communicate directly with any cesspool or sewer, but by means of a ventilated disconnecting trap.

Finally, it should always be borne in mind that the Alpha and Omega of sanitation is, simplicity.

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XX.

A DESCRIPTION OF THE CLEVELAND HOMŒOPATHIC HOSPITAL.

By D. H. Beckwith, M.D., Cleveland, Ohio.

As an organization we all are interested in the growth and prosperity of homœopathy. Were it otherwise I would not call your attention to the Cleveland Homœopathic Hospital, a drawing of which I herewith present to you.

About the first of September next (1879) the building committee will present to the trustees of the hospital one of the most perfect Homœopathic Hospitals in the world. I know of none that is its equal, and I can safely say no other of its size will be more complete. Its style of architecture is just what it should be; no useless decoration without or within, showing from its exterior, that it is a hospital. This building has been erected by the generous donations received from men, women, and children, of Cleveland, who are friends of this noble charity, and I am proud to say that when this magnificent structure is completed, we shall not owe one dollar on it.

The site on which the hospital stands has the highest elevation in the city, in a beautiful location, easily accessible to the population, whose wants it is intended to relieve. It is five stories high, including the basement, which is mostly above ground. The main building is fifty-two feet front on Huron Street, with projections on each side; the length is 110 feet.

It is substantially built of brick, with a rational disposition of stone, in bands, window-caps, sills, and other essential features. The roof is covered with red earthenware tile, with ornamental hips and ridges of the same material, which makes a roof equal

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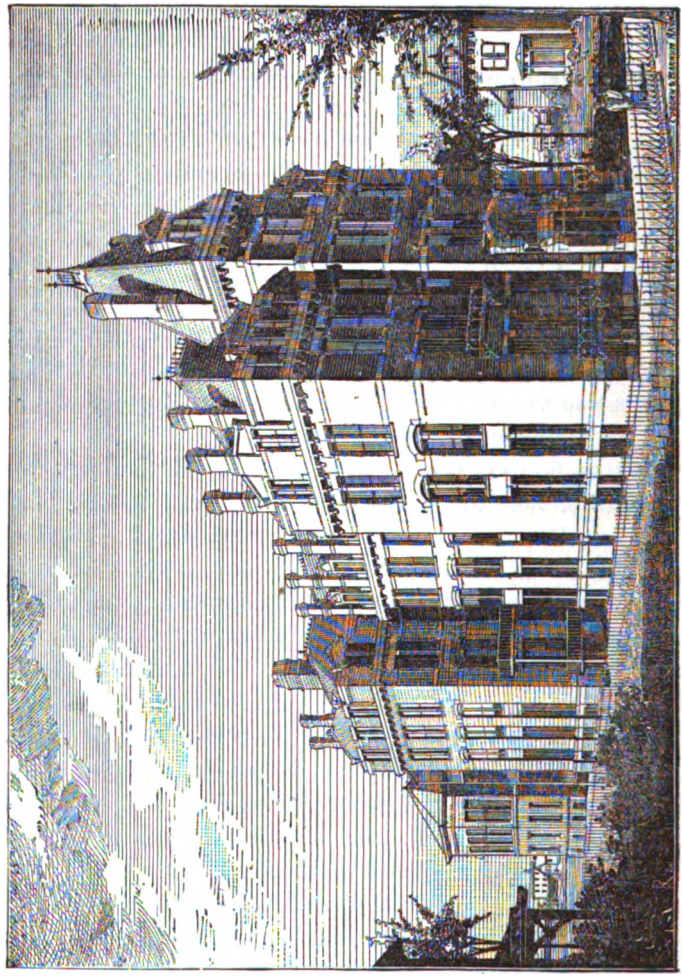

CLEVELAND HOMŒOPATHIC HOSPITAL.

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to the best of slate. The walls are hollow and furred on the inside to insure the complete exclusion of dampness. The floors are of hard wood, which, together with the plastered walls, are to be treated with paraffin, to make them impervious to the germs of infectious and contagious diseases. The floors are all deadened with cement, to prevent the transmission of sound and to add to the fireproof qualities of the building.

First Floor.—Situated on the lower floor is the boiler-room, store-room, the dining-room for the officers and assistants, pharmacy, dispensary, kitchen, and laundry. The latter has no connection with any other portion of the building, the floor is made of asphalt, and ventilating flues are arranged to remove the steam and odors from the washing apparatus. A large yard in the rear of the laundry will be used for drying clothes in fair weather, a dry-room in the fourth story at other seasons. An underground cellar in the rear of the building will accommodate vegetables, etc.

Second Floor.—On the second floor are rooms for the directors and managers, reception rooms, doctor's office, private wards, matron's room, patients' dining-room, kitchen for nurse and her private room, male surgical and male medical ward; these wards are eighteen by thirty-five feet each, they have a southern exposure, are thoroughly ventilated and well lighted, each ward having nine large windows. There is also a receiving ward, where patients may be conveyed without entering the main hospital entrance; it will be furnished with all the comforts and appliances that a surgeon may require in an operating room; within a few feet of this ward is a large elevator, by which a patient can be conveyed to the upper floors while on the bed, operating chair, or table. The main surgical ward is also within a few feet of this room, so that patients may be taken there and the operations performed away from the other patients. The bath-rooms and water-closets are large and have the most thorough ventilation.

Third Floor.—The third story in the administrative building includes private wards, patients' dining-room, nurses' room, and kitchen, and a very pleasant reading-room for the special use of patients. In the rear is a large ward for children, and a ward

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for female patients. These wards are the same size as the large wards on second floor, viz., eighteen by thirty-five feet. The fourth and fifth story will not be entirely completed or furnished until some future time, but will be in use as the lady managers of the hospital may direct.

In the fifth story it is proposed to have contagious wards until such wards are built in the rear of the building. The different stories are connected by front and rear stairways, by the elevator and dumbwaiters. Every room in the hospital is well lighted, and so arranged that they can be completely ventilated summer and winter. The arrangement of the different rooms and wards are such that but few nurses and assistants will be required to take care of the sick.

The distinctive features of the plumbing apparatus and system of sewerage are:

1st. All upright soil pipes are taken out through the roof; this insures free vent for all gases generated in the soil pipes.

2d. The main line of sewers is trapped outside the building, so that the upright pipes may not serve as vent pipes for the street sewer.

3d. Each fixture is trapped so that there is no passage of air from the wastes into the fixtures.

4th. All wash-bowls, sinks, closets, and other fixtures, are so arranged that the air will flow downwards into them, and through the wastes to a ventilating pipe attached above the trap. This draft is secured by the aid of heated shafts at various parts of the building.

5th. Should any gas escape through the traps into the fixtures, it will be caught by the downward current of air and taken off above the trap to the external air.

By these means it is entirely practicable to take care, not only of any gas that may escape into the soil or waste pipes from the street sewer, but also of any that may be generated inside the soil pipes, wash-bowls, closets, and other fixtures. Special pains have been taken to so arrange all fixtures that there is the least possible chance for the collection of filth anywhere about them. All the water-pipes, waste-pipes, sewer, gas, etc., are without any inclosing wood-work; all the pipes pass directly through the

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floors, and are in full sight, above and below, and are closely secured at their joints.

Commodes are provided for the use of patients who are unable to walk to the water-closets, and so arranged as to secure downward draft through the seats.

The exit for the foul air in the ventilating of the bath-rooms is placed over the slop-sinks, so as to remove as quickly as possible all odors occurring from their use.

The general features of the heating and the ventilating that have been introduced into the hospital are:

1st. The building is heated and ventilated by means of a low-pressure steam apparatus. Steam pipes are distributed through the building to supply heating radiators, and through the upright ventilating shafts for the purpose of producing currents of air therein.

2d. The steam is generated in boilers that are in the basement story, the condensed water being returned by gravity. There is a large boiler twelve feet long and forty-eight inches in diameter for winter use, and a smaller one for supplying the summer or ventilating system of pipes.

Each ward in the hospital is supplied with radiators of sufficient heating surface to keep up a proper temperature during the coldest weather ever known in Cleveland. Fresh air openings connect each ward with the outer air in such a manner that the incoming air will flow directly over the heated pipes of the radiators. Provision is made for the exit of foul air by the way of ducts and fireplaces. An upward and outward current of air is brought about in the ventilating ducts by the vacuum system; the upright shafts being heated for that purpose. To insure draft at all times up the flues of the fireplaces, whether there is fire or not, and to prevent a change of current in them by the suction of foul air-shafts or other causes, they are connected with shafts that are heated the same as those that are used for ventilating.

By this mode of heating and ventilating the grate fire might seem almost useless, but an open grate fire adds cheerfulness to the apartment and comfort to many a nervous patient. It also

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affords an opportunity for fire during the spring and fall months, when the large heating apparatus is not in operation.

In the large wards each patient has a cubic space of at least twelve hundred and sixty feet. The smaller wards have a cubic space very much greater, and, like the large wards, the air is brought in directly from the outside. Each ward is ventilated entirely independent of the other wards. The main surgical and medical female and children's wards are lighted from three sides, which adds much to the cheerfulness, and aids materially in ventilation.

A third, or interior, sash allows a plentiful supply of outdoor air without producing unpleasant drafts. The particular advantages of the system of heating and ventilating that has been introduced into the hospital are: First, the furnishing direct radiant heat to the walls and other parts of the building; and, second, by providing for a continued supply of fresh warmed air.

The cost of the building, when completed, will be about thirty thousand dollars ($30,000). The lot originally cost twenty-three thousand dollars ($23,000); it is sixty-five feet front, two hundred and twenty-five deep. Many of the private wards will be furnished by generous ladies who are interested in hospital work. The children's ward will be furnished by one lady who subscribed liberally for the building. The bedsteads and all the furniture to be plain and substantial. The mattresses to be made of the best material. The ward floors are to have mats instead of carpets.

Such is a brief description of the Cleveland Homœopathic Hospital.

The architects of the building were Messrs. Coburn and Barnum, of Cleveland, Ohio.

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XXI.

A FEW REMARKS ON THE CLIMATE OF CALIFORNIA.

By F. F. de Derky, San Francisco, Cal.

Since I became a member of this bureau I have removed from my old scene of work to this coast, a field entirely new, and differing in many respects from those East, South, and North. My residence here having been not quite six months, it would seem to me of but little value to detail the observations and experiences of one who has been so short a time in this State, or, as the phrase is used here, "on this coast," where the climate is considered to be, and actually is, so wonderfully different from any other over the rest of the world. Much has been said about California and its climate, and said a great deal better than I shall be able to; therefore, were it not that the subject under consideration is looked upon with considerable interest, I should choose to remain silent instead of repeating and rehashing what has been reported before.

Californians generally, natives, as well as the residents who have come from other parts of the country, with but very rare exceptions, after being in this State for some time, are enthusiastic about the climate and its invigorating and bracing effects. They say, to breathe Californian air makes you feel as if you were constantly somewhat under the influence of champagne; without being intoxicated you feel lively and strong, and at least ten years younger than you felt previous to coming here. The sluggish nature that creeps along leisurely elsewhere, afraid of fatigue and the wear and tear of exercise, braces up and feels its strength. Both man and animal can do

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more work, and eat more, and relish better what they eat, for the appetite becomes enhanced and digestion improved.

The climate, or I had better use the plural and say climates of the Pacific slope, for they are many and at great variance one with the other, are indeed remarkable. Within twenty-four hours, and in less time, you may experience the tropical, temperate, and cold, without travelling a great distance. In San Francisco one can wear a topcoat the year round without finding it too uncomfortably heavy or too warm. The last two days, June 2d and 3d, 1879, have been unusually warm, while East, or South especially, the same days would have been considered very pleasant; to-day the air is quite chilly yet not uncomfortably so. The chilly winds that this city is subject to can be almost entirely escaped by taking a trip across the bay to Oakland, a distance of only about four miles; and Alameda, two miles further south, has a more than semitropical climate, with all the luxuriant vegetation belonging thereto, without the oppressive heat. In San Francisco it is frequently advertised in the papers, "sunny rooms to let," rooms having the sun all day; how this latter could be accomplished would puzzle even a native Californian. Advertisements like these show that the people appreciate and feel the necessity of the sunshine. The fact is, that sunshine, even the hot broiling sunshine in summer is requisite and necessary for well-being in this region especially. It makes the blood course quicker, without causing headaches or inclining towards fatal sunstroke, hence the people covet it. In order to get as much as possible of sunshine into our houses, almost every one of them is studded with bay windows, which feature must really be looked upon as an outgrowth of the climate, showing the necessity and consequent craving for sunshine.

The flowers, and especially roses, are in bloom all the year round. I came here in December last and found a great variety of flowers in the front gardens, about the grass-plots, and everywhere; to-day we are in June, midsummer, six months later; the variety and profusion have increased, of course, but the general appearance is very much the same now, without having seen any diminution or any great change during that period.

Nobody can wonder that the name California is said to have

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been derived from two Spanish words, *caliente fornalo* (heated furnace), if we take into consideration that the heat in the interior valleys and cañons during summer will frequently register on the thermometer upwards of 100, even to 115 and 120 degrees. I scarcely dare to write it down, fearing it might be thought exaggeration, but it is, nevertheless, a fact. In some of the closed-in valleys it is said to rise even higher than that occasionally.

The winds are the bane and blessing of San Francisco, making street exercise very unpleasant, raising the dust, etc., during their prevalence, but carrying off noxious effluviæ and germs of disease. They commence daily, almost regularly, about 11 o'clock A.M., and abating about 4 P.M., occurring but very rarely during the winter months.

The fogs are quite frequent at all times during the year, in fact the air is very seldom quite clear and free from them except after rains, north winds, or slight frosts in winter. The Coast Range of mountains shut out the trade winds from the interior, and the fogs, not rising above the tops, share very much the same fate; they are driven down the coast and through the Golden Gate, and give vent to their pent-up fury by driving through the narrow channel, sucked in as it were into the heated inland, causing a sharp and chilling rawness in the bracing air.

The newcomer generally is affected somewhat unpleasantly, as is supposed, from the effects of the atmosphere, but, perhaps, really from too free and imprudent exposure to the same. The bracing and invigorating stimulation feels seemingly so good that overcoats and wrappers are thought superfluous and are dispensed with; colds are taken very readily, causing coughs, bronchitis, as well as pulmonary and catarrhal troubles. Experience is always a good teacher, so, after awhile, newcomers always carry overcoats and wrappers, and find them good protectors in case of need. To judge from the number of oculists and aurists in this city, the fogs, and winds, and the dust in consequence, must affect the eyes and ears very seriously.

On the whole the climate of San Francisco is tolerably equable, there being but a small difference of temperature between summer and winter. The winter half of the year is the only time in which rain falls, and then it is apt to rain hard for

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awhile, although the whole amount of rain falling does not equal that which falls during the same period in Eastern States. The summer being free from rain is not, however, free from mists and fogs. The winter is not unpleasant by any means, but by many is considered to be the more enjoyable part of the year, as San Francisco is then free from wind and dust. B. F. Taylor says: "How do you like California?" was the daily question; and to the uniform reply came the quick rejoinder: "Ah, but you should see it in the winter, for the summer is in the winter." Frost is very rare, the thermometer hardly ever going below 40–36 degrees; extremely hot days in summer are also rare, and occur only when the sea trade-winds change for hot land-winds.

The effect of the climate on man, as regards disease, does not seem to differ very materially from that of other regions; very much the same class prevails here as elsewhere, verifying the theory that man suffers alike, from pole to pole, in the Torrid as in the Arctic Zone.

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XXII.

VENTILATION OF SOIL AND WASTE PIPES AND UNDER-DRAINS.

By Horace M. Paine, M.D., Albany, N. Y.

The Germ Theory of Disease.—There is no question with regard to the obscurity which shrouds the origin and development of many forms of severe and frequently fatal diseases. Exceedingly plausible theories have been promulgated, have survived brief practical tests, and have been substituted by others, even more evanescent. The one which, at the present time, seems to receive an unusual degree of attention and very thorough investigation, is the *germ theory of disease.*

Many experiments are being conducted with a view of determining the sources of disease originating in, and in any way connected with, the ventilation and drainage of buildings. The question is one of very great importance. It involves the sanitary status of dwelling-houses, stores, offices, factories, and churches; in fact, of all habitable buildings. The air in but few dwelling-houses is free from contamination of greater or less intensity. One of the more frequent sources of impurity is found in imperfectly constructed soil and waste-pipes. This introduces the first division of the subject, that of the escape of noxious gases, which are lighter than common air.

Ventilation of Soil and Waste Pipes—Ventilation Upward.—The process consists of carrying the soil, or waste-pipe, upward to a point a few inches above the roof of the building.

This is one of those wise preventive measures, which experience has pointed out as the only safeguard in all cities, where the extensive and complex system of under-drainage becomes a constant and prolific source of contamination, by generating,

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confining, and concentrating within circumscribed limits poisonous gases, which are highly prejudicial to health, and which, unless speedily rendered innoxious by freely blending with pure air, constitute the principal exciting cause of bilious, remittent, intermittent, and typhoid fevers, and, in fact, all diseases having a malarial origin. The object designed to be accomplished by the introduction of the ventilating tube is the escape upward of the noxious gases, which are always generated to a greater or less extent in the soil pipe; also gases, which are forced up into the soil pipe from the drains below. These gases form in some instances very rapidly, particularly when developed by the heat of the house, to which soil pipes are always more or less subjected. They become rarefied and highly elastic when heated, and, as they cannot expand downward on account of the denser, because cooler gases in the drains forming an effectual barrier in that direction, there is no escape for them, except by expansion upwards into the dwelling. This often occurs in closed soil pipes, when the water-closet is being used, causing agitation of the water in the trap.

The soil pipe in dwelling-houses is usually twenty or thirty feet in length, and portions of it are frequently so located near heater pipes or chimneys, as to cause an elevation of the temperature of their contents far above that of the same gases in the pipes and drains under the ground. It is well known that the higher the temperature, the more rapid the process of decomposition; and the greater the accumulation of gases, the greater the pressure, and the larger the amount that escapes into the dwelling. It is also true that the presence of deleterious gases in a building cannot, in all cases, be detected by the odor. There may be sufficient concentration of nearly odorless gases in a dwelling to induce serious, and even fatal, disease in those who are specially susceptible to their influences. It is to be remembered, also, that the conditions of disease growing out of this form of impurity are not by any means equally intense, sometimes, scarcely distinguishable. Cases are constantly occurring in which persons, while able to attend to usual daily avocations, are yet sufferers from repeated attacks of debility, nervous prostration, bilious and gastric derangement. The only effectual method, by

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which this frequent source of contamination of the air in dwelling-houses may be removed, is, as previously stated, the carrying upward of the soil pipe, of a uniform size throughout, from the drain underground to a point a few inches above the roof of the building.

The Trap an Insufficient Protection.—Many persons suppose that entire immunity from the danger pointed out is secured, provided the trap under the water-closet is kept full of water. Undoubtedly, the water in the trap serves an excellent purpose, and is, in ordinary circumstances, essential to safety; it is found, however, that at times it is entirely inadequate.

The water in the trap is an insufficient protection. In the first place, when, by the sudden influx of a large volume of water, caused, it may be by a copious shower, the main drain or sewer is too small to carry off the accumulations with sufficient rapidity; or the lower end being entirely submerged, as very frequently happens at high water, when drains empty into rivers, or running streams, there is no escape for the foul gases in the drains, except backward and upward into the dwellings, through the crevices in the drains, or, if these are sufficiently tight, through the water in the traps.

In the second place, the trap becomes an inadequate protection, when on a sudden withdrawal of the large accumulations in the main drain, a partial vacuum is produced, often of sufficient force to draw the water by suction out of all the traps for a long distance back from the outlet of the main sewer. When this occurs there is, for the time being, no barrier whatever to a free ingress of contaminated air into the dwelling-houses. These sources of danger are entirely obviated by extending the soil pipe of uniform size to the roof of the house.

The Escape of Gases Heavier than Ordinary Air—Ventilation Downward.—There is, however, still another source of danger; for it is found, by observation, that the foul air in drains and soil pipes is frequently *heavier* than ordinary air. When this occurs, and the drain and soil pipe are sufficiently tight to prevent egress, the accumulation gradually fills the pipe, and at length flows over into the house whenever the water-closet is used. Danger from this source is greatly increased by the inser-

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tion of a trap in the drain outside of the house, and between it and the main sewer in the street. Nevertheless such a trap should be always introduced. It prevents the ingress of both foul gases and vermin from the main drain. The remedy in this instance is easy of application. It is essentially the same as the first mentioned, viz., the insertion of a small ventilating tube into the drain outside of the house, and between it and the trap, and extending the pipe a few inches above the surface of the ground. To prevent liability to frequent closure of this tube it is usually bent over at the top. This lower ventilating tube serves a double purpose, that of allowing the free escape out of doors of any gases denser than common air; also a ready method of ascertaining, by means of a lighted taper, whether any stoppage in the drain or soil pipe has occurred inside the building. The difference in the temperature inside and that outside the building is constantly changing, and necessarily creates currents, the movements of which can be easily determined.

The Benefit of Thorough Ventilation.—The good offices of these two ventilating tubes are, therefore, plainly apparent. They allow a free circulation upward and downward, thereby relieving the pressure of heated and rarefied gases; also the overflow of denser ones; also preventing the drawing of the water out of the traps by suction; thus securing perfect immunity, if the connections between the joints of the pipes are tight, as they should be, from all atmospheric contaminations within the building. It is safe to assume that no dwelling without them, however costly and well-appointed in other respects, is a suitable place of residence.

All Waste-pipes require Ventilation.—It is an error to suppose that buildings in which there are no water-closets do not require the ventilation of the waste-pipes from the sinks. Several of the most obstinate cases of chronic jaundice, also cases of frequently repeated attacks of bilious colic that I ever witnessed were undoubtedly occasioned by the escape of sewer gases into houses having no adequate protection of the kind described.

Danger from the Escape of the Contents of Drains into the Soil Underneath Dwellings.—While it is of the highest importance that soil pipes and drain-pipes within the building should be

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freely ventilated, it is also necessary that they should be so tightly joined as to at least prevent the exit of their fluid contents into the soil underneath the building, or at any point contiguous thereto. The escape of the fluids from imperfectly constructed drains into the soil underneath dwelling-houses soon completely saturates large portions of the surface earth, which, with or without the aid of the heat of furnaces or stoves in close proximity, generates an abundant supply of foul gases. These rise through the crevices of the floors into the house, and very frequently become a frightful source of disease and death. The disease of which Prince Albert, of England, died, was typhoid fever, occasioned by the absorption into the loose soil underneath his private library of foul gases which escaped from an old drain, a portion of which the laborers, while excavating for the foundation, left uncovered.

Many instances of serious and fatal diseases have come under my own observation, some of them during the past winter, not only in the tenement houses of the poor, where sources of contamination are almost unavoidable, but in the very best and most costly dwellings, in which every possible precaution against this very defect had been taken. Cases of severe, and very frequently fatal diseases, whose origin is directly traceable to this source, are constantly occurring in the practice of every physician.

The More Common Forms of Septic Diseases.—Diseases which are produced by the inhalation of foul gases are called *filth diseases.* They are designated *zymotic* diseases, or those occasioned by a "ferment in the blood." They are sometimes very active, malignant, and rapidly fatal. They apparently produce, within the period of a very few days, an entire decomposition and destruction of the normal constituents of the blood. In other cases they act as disturbing influences through many months, or even years. These are the cases in which the parties suffer, sometimes intensely, while still able to attend the daily routine of labor. The more prominent features are chiefly: Mental depression; unrefreshing sleep at night, and sleepiness during the day; loss of will-power; inability, without great effort, to concentrate thought upon any subject; listlessness; loss of physical energy;

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headache; dizziness; feeling of fatigue; pain and soreness in every part of the body; coated tongue; foul breath; loss of appetite and craving for improper articles of food; and frequent paroxysms of feverishness and thirst. Sometimes the poison appears to seize upon the local mucous membrane of the throat and air-passages, and then develop diphtheria, quinsy, and ulcerated sore throat. In others it acts more generally upon the system, and is manifested by the presence of boils, carbuncles, abscesses, or erysipelas. Sometimes it concentrates its influence upon the liver, causing a suppression of bile, producing a sallow complexion and jaundice; or a changed condition of the bile, resulting in constipation, or diarrhœa, or bilious colic. Again, in other instances the septic poison develops all the low grades of fevers, particularly spinal meningitis, bilious, gastric, and typhoid fevers of a remittent or intermittent type.

Liability to Danger from Drainage into Cesspools.—Without doubt a thorough system of under-drainage in cities is far preferable to drainage into cesspools, such as is frequently resorted to in the country and in small towns. Drainage into cesspools, like the infiltration of sewage underneath dwellings, frequently becomes a prolific source of disease. The soil, for a distance of many feet, becomes fully saturated, and then overflowing into the cellar of the house, or finding natural channels underground, passes readily into the well which supplies drinking-water for the household. Then, too, soils of an impervious structure, by preventing the absorption of the fluids, causes them to come to the surface, where the heat of the sun quickly engenders putrefaction and the formation of noxious gases. It is probable that "filth diseases," when they occur in the rural districts, in a large majority of cases are a result of local causes, having their origin in defective surface or cesspool drainage. Careful observation establishes the presumption that diphtheria is a "filth disease," and that its presence so frequently depends upon this germinal source that, in all cases, it is safe to assume the presence of local septic origin. The unusual number of cases of diphtheria of a malignant type which have occurred during the past two or three years in the village of Amsterdam and its vicinity, are very clearly traceable to this source. The soil in nearly the whole

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village is so very shallow that under-drainage is impossible. In other localities, like that of the village of Lansingburgh, where the soil is made up of coarse gravel, and the drainage is largely into cesspools, both diphtheria and typhoid fevers are of very frequent occurrence.

Thorough Ventilation of Waste-pipes and Drains Secures Comparative Immunity from Septic Diseases.—It is unnecessary to add to the stock of undisputed facts in favor of the germinal origin of these septic diseases. So far as my observation has extended, I can emphatically state that I do not recollect having witnessed or treated a single case of typhoid fever within the past ten or fifteen years in any house in which there has not existed a defect, either in the ventilation of the soil pipe or in the imperfect construction of the under-drains.

Doubt Regarding the Noxious Qualities of Sewer Gases.—There are many persons in every community who do not believe that sewage vapors are, to any considerable extent, prejudicial to health. They claim that far too great importance is attached to this subject, and that the series of proposed protective measures are expensive and unnecessary. They predicate their opinion on the well-known facts that many persons enjoy almost entire exemption from malarial diseases, while living, often to old age, in districts where the sources of contamination are abundant and constant the year round. They bring forward as conclusive argument, also, the statement that thousands of persons live many years, spending several hours daily in the sewers under the city of London, and with, it is claimed, far less than the average percentage of deaths, from septic diseases.

These statements, taken alone, are well calculated to throw doubt upon the theory of the power and extent of the pernicious influence of septic diseases; but, it is also to be considered, that they are, to a great extent, unreliable, as being too general in their application. It may be found, by a careful collation of all the facts and conditions involved, that the alleged comparative immunity from malarial or septic diseases is not as great as is claimed. It is probable that the supposed immunity is exceptional; also, that it merely affords an illustration of the ability of the human organism to resist disease-producing forces.

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It is not, however, my purpose in preparing this paper to enter upon a critical or exhaustive examination and discussion of this important subject, or to attempt a reply to the argument advanced. While admitting that, in some cases, many facts appear to controvert the theory of septic contamination of sewage gases, we must also concede that in other circumstances and conditions the evidence in support of the disease-producing power of these gases is abundantly conclusive.

Without attempting to reconcile these two apparently conflicting conditions, we accept the fact of the actual presence of these deleterious gases, and have endeavored in the foregoing statements to suggest such preventive measures as appear to be thoroughly effective, and at the same time easy of application.

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XXIII.

THE RELATION OF DEFECTIVE DRAINAGE TO DIPHTHERIA.

By George F. Hand, M.D., Binghamton, N. Y.

It has come to be pretty generally believed by the medical profession that one of the most common causes of diphtheria is defective drainage, and that the disease prevails most extensively in the vicinity of swamps, canals, open sewers, vaults, etc.; also that the disease might be stamped out and kept out if the drainage system of our houses and cities were perfect. But neither my own personal experience, nor any trustworthy statistics which have fallen under my eye, have led me to believe that these conclusions are correct.

A number of years ago it was suggested by some self-styled scientific man that diphtheria was caused by the burning of kerosene oil, or by its presence in the house. It was asserted, and voluminous statistics were brought forward to prove the truth of the assertion, that all the victims of diphtheria were found to have been exposed previous to the attack to the odor of coal oil. Now inasmuch as almost every family in both town and country used this oil, it was wellnigh impossible to disprove the theory, and it found many supporters.

A few months ago an article appeared in some of the medical journals, accompanied with statistics, which showed beyond a doubt (?) that diphtheria only occurred in families who used Irish potatoes, and doubtless it was to be attributed to the potato disease or rot. This article was followed by those of other observers confirmatory of the theory. This, like the kerosene

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theory, was much more easily conceived and promulgated than successfully combated, and it is doubtful if any one has been foolish enough to attempt to disprove, though probably no one believes it to be true. About a year ago diphtheria of a malignant type prevailed quite extensively in the village of Geneva in this State, and many fell victims to it. The cause of the epidemic was very thoroughly investigated, as was thought, by the physicians of the town, and the conclusion arrived at almost unanimously that it was to be found in the drinking of well-water. I suppose there are not ten men in Geneva to-day who do not attribute to this cause the terrible scourge that visited them last year. Now every one, or almost every one, in Geneva drinks well-water, and hence the utter impossibility of disproving the Geneva verdict. I have yet to see any statistics which prove conclusively that the theory of defective drainage as a cause of diphtheria is not of a piece with those to which I have alluded. My own observation leads me to think that it is. Diphtheria has prevailed constantly, and at times quite extensively, and of a malignant character, in the city of Binghamton and vicinity for more than three years past. I have observed the disease very carefully and am confident that its causes are as yet undiscovered. Binghamton is situated at the junction of the Chenango and Susquehanna, two limpid and swiftly flowing rivers.

The whole country is remarkably free from stagnant water or swampy ground. Our system of sewerage is quite as good as in most other cities of our size.

The west side of the Chenango is an elevated plain, considerably higher than the more thickly settled portion of the city on the opposite side. Through this lower ground on the east side, through the centre of population, runs or did run the Chenango Canal. Two or three years ago it ceased to be used as a canal and became a perfect slumhole of stagnant water. Along the banks of and near this canal dwell many of the more degraded and filthy class of the community. On the west side of the river a large proportion of the inhabitants belong to the more wealthy class of the community. Theoretically the vicinity of the canal ought to be the favorite haunt of the dread destroyer. As a matter of fact the west side has been the region where it has

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claimed most of its victims, and the neighborhood of the canal during all these years has been the freest from the disease of any part of the city.

I must not be understood as decrying ventilation and drainage as unnecessary by any means. Pure air and plenty of it is a better health preservative than all the contents of the doctors' shops combined. Those who breathe pure air are much less likely to contract disease of any sort than are those who breathe impure air. But there has always been defective drainage and faulty ventilation, yet diphtheria is comparatively a new disease. If the specific poison which produces diphtheria, whether animal or vegetable I care not, exists in sewer gas, why should not the disease have prevailed in former years as well as now? Again, why does the disease prevail in a village to an alarming degree, while another presenting apparently the same conditions remains entirely free from it? For example, an inhabitant of Warsaw, a village not very far from Geneva, told me not long ago that there had never been a case in his town. And why, in a town presenting the same conditions from year to year, does the disease prevail for a series of months or years, it may be, and then entirely disappear? It seems to me that the theory under consideration has not yet been demonstrated.

Diphtheria is produced by a specific poison. Till it can be shown that this poison exists in our sewers or wells we have nothing reliable to build upon,—as far as this theory is concerned. One demonstrated fact is worth a hundred plausible theories, and a hundred plausible theories are promulgated for every fact that is demonstrated. I have written thus in relation to this subject because I do not wish the medical profession to settle down with the conviction that the cause of diphtheria is now understood, and that with the removal of this imaginary cause the evil will cease to exist. If we are fighting an imaginary foe while the real one exists and acts we are wasting time, and human lives are going out. "Be sure you're right, then go ahead." We must seek further for the causes of diphtheria. When discovered I pledge my assistance, and trust we shall be successful in stamping out the disease.

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APPENDIX.

DISCUSSION.

SECOND DAY—MORNING SESSION.

DR. BUSHROD W. JAMES, pointing to hanging charts, said: This cut represents the worst form of sewer that can be made. You can see where it clogs These interstices are all filled, and the corners choke up. The debris finally gets higher and higher until the sewer becomes entirely useless. Here is another form, but this is subject to the same objection; the accumulation commences in the same way in the corners, and it, too, is finally filled. That is a better form than the other; but the best plan is the real old Roman style, which was built of good material, with a hard and square bottom, perfectly smooth throughout its whole surface. Improvements have gone on from time to time until sewer builders have finally settled upon the egg-shaped sewer as being the best. Here you see it; it is suitable for the purpose, especially where it takes house-drainage and surface-drainage. The ordinary crown sewer, where surface drainage does not occur, is probably the best form. It is the cheapest, and will carry off the refuse just as well; but when there comes an extra amount of water, or a strain from any cause, this shape is not as good as the egg-shape. These two are as cheap, I believe, as any of the more recently improved. When the sewer passes through moist soil a special set of drains must be made. A sewer, to be perfect, must be impervious to water from the outside, and it must carry off all the drainage of the town. In addition to the ordinary sewers made in this way, they now put around them in some cases a system of gravel cement. There is one plate which I have not here, that would point out all the ordinary defects. The other papers will explain more fully how these things may be remedied. Our people think that they have perfect sewers, as a general rule, but they are often much mistaken. In some houses, especially in smaller towns or places, where they do not have a supply of soft water, they get drainage from the top of the

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house, and collect it in large reservoirs at the bottom of the house. Then there must be an outlet of course; when the receptacle gets full they generally run the surplus water into a pipe, which sinks to the water-closet pipe; and the cellar drip runs off in this same way; all go down into the same pipe. That is a system of the very worst kind of drainage, and seems to be fixed for the purpose of producing the most injurious effects, because in the first place you will have sewer gas escaping into the cellar; in the second place it also escapes into the tank where the soft water is, and mixes with the water; then it comes out into the kitchen, into the water-closet, and into the bath-room. Various methods have been adopted to carry off these gases. I have a cut here that will explain the proper system of ventilation and drainage of sewers and the pipes. This is, to have the sewer manhole open at the top; and then have another ventilator near the house by a double trap; then have another ventilating tube from the other end of that pipe, and a similar tube from the bottom of the waste-pipe from the house. In that way you keep a constant oscillation between the pipe that comes from the cellar here and the one below; these are both on the lower level. You must have an outlet for the air, and you must have an inlet, to allow the air to come in from below to ventilate the sewer; by that system you keep a constant oscillation of the air, and the gases cannot escape into the house; thus by means of these two tubes, leading from that trap, we have a house drainage thoroughly perfect and reliable.

DR. D. H. BECKWITH: There is no subject so interesting to us as that of drainage, and the question of the proper trap. This matter of the trap has been tried many thousand times without success. I place before you a plan of a wash-bowl, with a trap. You have below what is called a bowl-trap. It is made of a glass bowl, holding one or two quarts of water, with a trap at the bottom. In this bowl there is a rubber ball. As soon as the water gets down the ball rises on the top of the water and closes this pipe; it presses directly up against this tube, making it perfectly air-tight. Now you would suppose that there would be no escape of sewer gas. We have connected with this a heating pipe. This is the only true process of ventilation. You all know that sewer gas is inclined to go upward, and it will go up with heated air. So we have a heating pipe which takes the sewer gas to the roof.

DR. E. U. JONES: In regard to the trap theory I would like to call attention to the experiments which I made with the Bower trap. It consists, as Dr. Beckwith has stated, of the leaden cap,

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comprising the inlet and outlet. The inlet of the waste and the outlet of the waste to contain water. Beneath is a glass cup, which screws on to the leaden cap, made perfectly tight by the interposition of a rubber ring. Beneath the end of the inlet-pipe is this rubber ball. The theory is that, being perfectly air-tight, the rubber ball is forced against the end of the inlet-pipe by the power of the contained air, which is shown in the diagram by fine blue lines. It is also claimed for this trap that it is perfectly incapable of being siphoned. You can all see that, so far as the compression by the air or by the water goes (that is one of the subjects treated of in my paper), the compression will throw back sewer gas, or the gases resulting from decomposition of sewer matter, into the house. That trap is a very excellent one, if you allow for a constant use of the wash-bowl. Two or three points come into consideration here in connection with this subject. One point is the power of the water in absorbing and transmitting these free gases that we want to get rid of. If that water is allowed to remain for twenty-four hours in direct connection with compressed sewer gas, a sufficient time for it to absorb, and not only to absorb, but, where it has the power, to transmit also the sewer gas back up into the pipe which leads to the bowl, you will have difficulty, and consequently you will find the gas escaping into the rooms and into the house everywhere. That point, however, can be almost perfectly met in this trap.

The next point is the siphoning out of the trap. I will explain what I mean by the siphoning out. It is where one wash-bowl stands above another on different stories, and where all the waste enters into the same waste-pipe. This matter has been referred to by Dr. B. W. James in his paper. This difficulty is overcome by having a waste-pipe for each bowl; it forms then a perfect trap. If that is not done the water coming out below will leave your trap untrapped. The same thing is done by your sewers which enter into tidewater, where the tide falls back half way up the sewer, perhaps, and in its rush back, especially after a storm or anything of that sort, forces the gas back through the sewer with a power which has been admitted to be at least twenty pounds to the square inch; it also has a great suction power. You can easily see from that how a very common trap can be emptied and no water remain, and then the trap is filled with compressed air which rushed up, in the first place, from the rushing in of the other air, and can be and will be thrown into the houses; that you have often noticed after a storm, that is, all of you whose houses are connected with sewers.

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The sewer system is defective, and after a storm you almost invariably feel, know, and smell the sewer odors.

In the course of my trials with different traps I have had a varied experience. I investigated traps that had the highest recommendation. I called in at a plumbing establishment in our city and interested the plumber in my investigation. He, thinking he had a perfectly sure trap that could not be siphoned out, was willing to aid me with time and labor. I attached a piece of lead pipe to the exhaust pipe, and to this I attached, at some distance, a common pump, which should give me a certain percentage of suction. It was impossible, gentlemen, to siphon the trap out,—that is, *all* the water that was in it. But what was the result of the effort? The first stroke of the pump took every mite of water down to there (indicating). It is perfectly true that the rubber-ball remained for a period in oscillation, or did remain in perfect connection with the end of this pipe; but the slightest tap on that glass cap started the oscillation again, and as the pressure of the water, which was below, to hold that ball up, was not sufficient to keep it steady, the ball kept moving about and gave an ample entrance for more gas than you wanted to get into your house. So far as suction is concerned there is no possible prevention to the entrance of sewer gas into your house, if that has once taken place or can take place. It can take place where the traps are over each other in the different stories. After putting six of these different traps on to that pump we found every single one of them leaked. We found it was almost impossible, without using extra power, more power than could be put on, to screw that glass pipe so tightly as not to get air in between the glass cup and the lead heading. Even the rubber was not sufficient to prevent it. The slightest inequality in the lead, or the least pressure, each in a small degree, allowed the entrance of the air. The plumber decided that he would never put one on until he had fitted it thoroughly. I have made many experiments with traps, and have found leakages in all of them from the pinholes and airholes. Now such traps as these are imperfect in theory, and are not safe to put on any hospital nor into any private house. I use this diagram as an illustration, both because it is here and because it is one of the best of the kind which has been presented for our adoption and consideration; but, without going any further, I merely wish to make this one remark. I have gone through with my experimentation thoroughly, and only wish I had a longer time to proceed further in the same way. I have come to the conclusion that the simple, plain lead trap is the best you can have.

Dr. J. P. Dake: It strikes me, Mr. President, that it is a

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very important matter for us to adjust ourselves on this matter of boards of health, or show that we assume a proper attitude towards them. It is well understood that in the main these boards were made up of physicians of the old school, and that they were considered as amenable to their code. As long as the boards were thus made and their influence was cast directly against us, so long as we were fought off from and kept out of them, of course our attitude was that of opposition. Now since things have changed we may consistently come in and, without any humiliation to ourselves, take part in their actions and give them our fullest support. In districts where we are largely consulted and are valued, we may manage to be placed on boards composed of physicians of the old school.. We may not ask where we are weak, that we shall come in and have a member of our school appointed. In the State of Tennessee we have a State board of health made up of old-school physicians, and their only public act was relative to a provision in reference to scarlet fever. They made a special effort against the use of Belladonna, declaring it was no preventive whatever.

Now, at the last session of the legislature of Tennessee, I made it my duty to have the law creating that board amended, and I succeeded in having an amendment adopted by which a layman was appointed. We are not numerous enough in that State to ask for a physician of our school, but we got two laymen put on, one of whom is a friend of homœopathy. Consequently the character of that board changes. Now it is a sanitary affair. It is not a medical body, and the code has nothing to do with it. Now we can co-operate, and the secretary of the board came to me after this change was made asking for a list of the homœopathic physicians, so that he might correspond with them and get them all at work. So, our course should be to have representatives on these boards where we can, and where we cannot, to see that laymen are appointed; then they are sanitary affairs and not medical.

DR. D. H. BECKWITH: I wish to say one word about Dr. Jones's paper. He left us in a little doubt. We all know that the old S trap has been in use for years. If Dr. Jones had been in houses where the sewer gases were blown up through the house at every change in the direction of the wind I think he would have changed his mind about that trap. The entrance of sewer gas into our houses is a very serious nuisance. I would like to show you how to make a trap. There is only one way that I know of to make it perfectly safe. If you look at this plan you will see that the trap has a pipe connected with a heated service. You can run it up through your roof, or you can run

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it into the chimney, which is warm eighteen hours out of twenty-four. In this way the gas will escape from your house. If this is done you will have a perfect trap.

This is better than the old-fashioned S trap. If you have a low S trap, and don't wish to put this in, you can connect your pipe in that way

I am asked the question over and over again, how you can clean the trap from foul substances. It takes about half a minute to occasionally unscrew the trap and cleanse it.

DR. JONES: I would like to say one word more on the matter, because I did not have time to finish my remarks. If you will take the same pains with an old S trap with regard to your ventilation and your heating, that you are obliged to take with that trap, the S trap is best. And then another thing, we are talking about common houses, not about expensive houses, where no money is spared to attain the end desired; we are discussing what we can do as practical men, within our means, and what we can recommend to our patients to have their houses so fixed, at no great expense. A great many of our patients have not the necessary means, and are not disposed to lay out so much money for a thing which seems to them theoretical. When that glass cup is taken off it will be found in many cases entirely coated with grease. The sewer gas is formed at a degree of heat not exceeding 40° Fahr., anywhere from 40 to 60 degrees. You can hence form the sewer gas from decomposition of animal substances, grease, etc. Now, after decomposition sets in, the gas is admitted into the room every time motion is made in that bowl, and there is a chance for the escape of gas up into your houses. More than that, you have got to take it off, I think, according to Dr. Beckwith, once a month to clean it. Now, who is going to do that thing? Who is going to test it and see that the cap is screwed up so tightly that no gas can get out? Who is going to see if anything is left there at all, and why is not that trap a great deal worse than the common S trap? You should have an engineer to attend to it all the time. Therefore I say the common S trap is the best.

DR. D. H. BECKWITH: Have you ever seen the glass ball ground in?

DR. JONES: When I was speaking about common houses I did not have reference to the houses of the wealthy people. I certainly think that the common S trap is the cheapest and safest trap you can possibly have. One point more, and that is, you all know that in connection with rubber, every rubber manufacturer instructs you to keep grease away from it, because they say

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the grease destroys the rubber. Now, what is going to be the benefit of that?

DR. BECKWITH: I might merely say that there is a glass ball which fitting accurately obviates all that.

DR. OWENS, Cincinnati, O.: About two years ago I had occasion to investigate this matter of ventilation of traps. I examined this trap and a number of others, and finally settled upon the S trap properly ventilated. Now, the method of properly ventilating that trap, and preventing sewer gas from entering the house, and preventing the trap from being siphoned has not yet been suggested by any one I have heard speak. I will use this figure here for the purpose of illustrating the method by which it was secured in my own residence. First, I will say the water introduced into my residence is from the common supply in the street, eight feet below the walls of my house; it is then carried to the side of the kitchen chimney, and from that to the third story, along the side of the kitchen; as the chimney never freezes, we have never had the water even chilled in our washstands; the floor at the bottom of my cellar is cemented, so that it is impossible for the moisture to ascend. The walls of the cellar are laid in cement, are thirty-two inches above the level of the street, and the cellar is ventilated. Now, as to the common S trap. It is attached to my kitchen sink, and also to the waste-pipe with the street sewer and the third story. The water-closets, which are also in connection with the building, the second and the third stories have the same pipe, which ascends to the roof of the building alongside the chimney; heat from the kitchen fire always keeps up more or less draft. But as to the ventilation of the trap; we will suppose that (indicating) is the side of the house along which descends the water-pipe and conducts the water from the roof of the house. Alongside of that I have a two-inch galvanized iron pipe which enters the waste-pipe from the bathroom and washroom, the washstands and the kitchen sink, which all form a single common waste-pipe for the street. This (indicating) is the entrance of the waste-pipe, at a point beyond the attachment of either of the other pipes, which latter are connected with a little S-shaped trap entirely external to the wall of the building, so that no gas enters or passes beyond the wall of the building, or towards the interior of the building; all of the gas then that will ascend from the sewer reaches this point, ascends towards the roof of the building, and is discharged into the air at a distance of forty-five feet above the ground. It is impossible to siphon the trap, for the reason, that all the air which would be carried down through this pipe, and which

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would otherwise siphon it, comes down through the pipe which passes on the outside of the building to the roof. That supplies all the air. The reason why all your traps are siphoned is because you have no supply of air to reach the pipe external to the point of contact with the sewer outside of your house. If you will supply a pipe which will furnish air enough to admit of a draft being made up by this current independent of the trap, from a different source or another pipe, you will never have your traps siphoned. That is the principle of the law in this matter. It is something I believe which has not been mentioned by any gentleman here to-day. The thing may have been seen by them and they may have thought of it, but it has not been mentioned. I refer to it as a practical experiment which has been entirely successful in my house.

DR. CUSHING: I think my water-pipe is fixed in the same way. It comes from the roof of my house and answers the same purpose. It is connected with my drain-pipe outside the trap, whereby I carry all the water off that comes from my house down into the pipe, which keeps it perfectly clear, and the gases that come from the street pass up the water-pipe. Where the building is very tall it is impossible to drive the gas out entirely by any other method.

DR. OWENS: The water coming down keeps the pipe entirely clean, as I have suggested.

DR. ALFRED POPE: I do not propose to make any remarks upon the question of drainage brought before you; but I do wish to say that, a few days ago I had the pleasure of inspecting the hospital over which Dr. Beckwith watches with all the anxiety and even the tenderness of a nurse, and of which he has given you such a full description this morning. I wish to report that from my inspection I may safely say, I have never seen an institution which gave me, as a homœopathic physician, greater pleasure. In every department the greatest care has been manifested to provide for the comfort of the sick and the injured, to promote their speedy recovery, and to prevent any accumulation of the many sources of disease for which hospitals in olden time have been in many instances made little more than pest houses. Such an institution as this reflects the greatest credit upon our medical friends and their patients in Cleveland. The hospital is an honor to the State in which it stands, and I rejoice to state that such an institution is connected with homœopathy. (Applause.) I trust that ere long our medical brethren in other important places will add to the number of hospitals already established, I would add in Philadelphia and Chicago;

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and that they too will be able to exhibit a hospital which should be modelled upon that which is so rapidly approaching completion in Cleveland. (Applause.)

On motion the discussion was closed.

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SECTION XIV.

REPORT

OF THE

BUREAU OF MICROSCOPY AND HISTOLOGY.

C. P. ALLING, M.D., ... Bradford, Pa.
A. S. EVERETT, M.D., ... St. Louis.
A. VARONA, M.D., ... New York.
S. A. JONES, M.D., ... Ann Arbor, Mich.
W. H. WINSLOW, M.D., ... Pittsburg.
HENRY BAETHIG, M.D., ... Buffalo, N. Y.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 3.

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V. The Microscope in Practical Medicine, ... W. H. WINSLOW, M.D.
VI. The Triturations of Aurum Metallicum, ... J. EDWARDS SMITH, M.D.
VII. On the Germ Theory of Disease, ... C. P. ALLING, M.D.
Appendix—Discussion.

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V.

PRACTICAL USE OF THE MICROSCOPE.

By W. H. Winslow, Ph.D., M.D., Pittsburg, Pa.

The man, who has seen the sting of the bee, the prickles of the nettle, and the compound eye of the house-fly under a microscope, has his acuteness of vision somewhat sharpened. The ordinary act of seeing is almost an unconscious exercise of the eye, by which pictures are received upon the retina and transmitted to the brain, much as they are reflected by a mirror; but, in looking at an object under a microscope, the vision is more acute, owing to the expectant and concentrated attention of the mind upon the neural changes, so that pictures are more accurately delineated and transmitted to the consciousness. To prove the influence which this condition of the mind, a form of expectant attention, has upon vision, let a novice look at a simple tissue section stained with carmine, after you have described by words the different elements present to your practiced eye.

After lengthy scrutiny, he may tell you he sees it and "it is all red," as did the student of ophthalmology, after trying to see the fundus of an eye with the ophthalmoscope. Now draw a rough diagram of the tissue picture, point out the constituent elements, instruct his mind as to what he should see, and his expectant attention will so quicken the perceptive elements of the retina, that he will have no difficulty in seeing well, and will produce a rough draught like your own.

There is then one kind of seeing which is not seeing, and another of perfect retinal and mental vision. "Ye have eyes to see, yet see not," and this applies to very many persons present.

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We all know how sensitive is the ear of one educated in music, the nose of a hunting dog, the tongue of a professional tea-taster, the finger of the accoucheur. All are examples of special senses brought to a high degree of functional activity, by the concurrent and correlated exercise of nerves and ganglia.

We are ready to acknowledge the superiority of each of these in his specialty, and must, therefore, agree that the microscopist sees more things and sees them better than other men. It is not alone in seeing that he excels; his touch and muscular sense become very delicate by handling small objects and performing the various manipulations of his art.

What is more necessary to the physician, than the highest development of his special senses?

This development is necessary to win the respect of the intelligent, and that self respect, which comes from the possession of accurate knowledge ready for use in the cerebral cells. It can be acquired by most persons at a trifling expense, with a moderate amount of study and manipulation, and I maintain, though it is not necessary to be an expert, it is the duty of every practicing physician and surgeon to know enough of the microscope to be able to apply it to its various clinical uses. It is not the plaything, not the scientific enigma which so many suppose, but a plain common-sense machine, that improves greatly upon close acquaintance.

A microscope is a combination of lenses, which, by refracting rays of light from a minute object, brings its picture within the scope of the human eye. The lenses are fixed in tubes, and are moved by a cog-wheel, in order to bring objects beneath to the proper focal distance. The lenses above are called the eye-piece, those below the objective; there is a stage below for holding the object for examination, and it is perforated for the transmission of light, reflected upwards by a movable mirror placed beneath; the whole is supported by a stand with hinge and broad base.

A microscope to serve most clinical purposes may be had for $30; a much more satisfactory one for $50; and a superior instrument with much accessory apparatus for about $100. Slides, covers, needles, fluids, balsams, etc., for much work will not cost

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over $5. The expense of an outfit for microscopic work is therefore trifling.

The use of the instrument for ordinary tests and examinations is too simple to merit my attention here, and can be easily learned from numerous inexpensive books.

The microscope is now the constant companion of the man of science, and a joy in many a household. The additions which it has made to our knowledge are enormous; there is not a branch of natural science which is not indebted to it for much of its most interesting matter.

It enables us to see crystallization in progress, and frequently to name the element or combination from the form; it shows us adulterations in medicines and food, and the characteristics of our triturations; it reveals the porosity of charcoal and platinum black, and the classification of geological specimens; it defines the habitations of polypes and the agglomerated rhizopods in England's chalk cliffs; it differentiates the cells of organic bodies, and enables us to draw a sharp distinction between the animal and vegetable kingdoms; it has made us as familiar with amœbæ and bacteria as with elephants and spruces; it has exposed the organic process of fermentation, and pointed at the spores of cryptogams as the germs of disease. What the telescope has been to astronomy, the microscope has been to biology. As the former revealed countless worlds and whirling nebulæ in infinite space, so the latter has brought before our astonished vision myriad miniature worlds around our feet. Into the delicate organizations upon which life depends the microscope enables us to penetrate; the dark abodes of unseen life are lighted up for philosophic contemplation. New forms of organized beings, new phases of existence, unthought of functions in active exercise reward the microscopist.

Think how destitute would be our physiology without a knowledge of mucous corpuscles, of the minute glands and their cellular products, the rods and cones of the retina, the organ of Corti, the bipolar and multipolar nerve cells. The great principle of the uniformity of all cells in the beginning of development, and their gradual change of shape and function to complete an animal, were worked out by this instrument, and from

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these, facts of vast importance to humanity have been derived. A wide abyss no longer separates health from disease. The changes of disease are modifications of those which occur in health, and the same physiological laws obtain. Cell life goes on in an imperfect way till no longer able to struggle under the burden of irritation, the tissue yields, a slight change occurs in the nuclei of cells, and pathology begins. Upon pathology rests symptomatology, and scientific medicine depends upon a knowledge of both, and their relations to the body.

The practical uses of the microscope are many and various. The air contains considerable inorganic and organic matter, with spores, seeds, and entire vegetable and animal organisms. These may point the rays of a sunbeam, but are altogether too minute to be differentiated, except by the microscope. It has happened that great quantities of dust have fallen in different countries, and upon ships at sea, which have been identified as the ashes of certain volcanoes, the sands of Sahara, or *rhizopods* from well-known shores and mountain ranges. Showers of flesh, of green slime, and red rain have caused consternation in places, and the microscope has denominated them different varieties of the *protococcus*. The germ theory of disease has been originated, and fermentation and putrefaction made plain, by the discovery of the aerial spores which exist in vast numbers around us, and their germination within certain recesses and canals of our body and in the blood has been proved beyond cavil. The cause and transmission of disease may be in these minute bodies, and with such phenomenal substances in the air we breathe, it is the duty of the physician to know of what they consist, that he may answer the questions of curious laymen, quiet the fears of the ignorant, foresee and ward off disease, and help to elucidate the great questions which medicine offers for solution.

The microscopic examination of drinking-water is not so frequent a necessity, but occasionally vegetable and animal organisms render it unfit for use, and the physician should be able to determine the cause of deterioration. A family living upon a clay plain fell sick, member by member, and the physician thought the cause to be from using water from an old well, as it had some movable white points in it. I put them under my

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microscope, and they were excellent specimens of the *Branchiopus stagnalis* (water-fleas) of the *Entomostracans*. Ponds have become red in a few days from spores of the *Englenia*, a family of *Infusoria*. Water containing decomposing vegetable or animal matter swarms with horrible forms.

Beside the use of the microscope for detecting adulterations in food is its importance for examining for extraneous substances and parasites. Professor Smith, of Cleveland, I believe first pointed at the existence of hairs in the new oleomargarine butter, and their liability to be infested with parasites. Pork contains sometimes *trichinæ* and *cysticerci* of the *Tænia solium*. Old ham, sausage, and cheese may be beds of fungi very dangerous to health. At any time a doctor may be called to determine the cause of a case simulating poisoning, and a little knowledge of how to use the microscope may prevent him arousing grave suspicions.

The domain of disease presents many uses for the microscope. It is the only means of determining the nature of many parasitic diseases. Tapeworm is more frequent than formerly, and the variety has changed. We suffer now from the *Tænia medio-canellata*, which holds to the intestine by suckers, instead of hooks, like the *Tænia solium*, and hence is easier displaced. This is the reason tapeworm diseases are so quickly cured by some physicians, while cases where the *Tænia solium* is present prove very obstinate. From this difference of species comes the conflicting evidence in regard to treatment. The embryo of the *Tænia medio-canellata* is found in the flesh of the ox, and rare beef is unsafe diet. The *Tænia solium* is present in measly pork, and can be seen with the eye alone. Bacteria may be detected in the blood, secretions, and false membranes of the body, but their discovery is of little practical use.

In doubtful cases of lung disease the sputa should be examined under the microscope and, if elastic tissue is present, it indicates dangerous organic disease.

Strange substances sometimes appear in the fæces. A box of gray sand I once examined was exfoliated epithelium; a box of red sand proved to be biliary calculi. A lot of dark shreds were supposed to be casts of the mucous membrane, but the microscope showed them to be smoked beef, which the patient eat surreptitiously.

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Urinary analysis is now a specialty. Diseases of the genito-urinary apparatus cannot be diagnosed accurately without this instrument.

There is sometimes found in the urine a "red sand," which the microscope shows to be uric acid, indicating excess of nitrogenous food or deficient oxidation; amorphous urates and phosphates sometimes become colored by biliary coloring matter, and form another "red sand," indicating vicarious action of the kidneys and hepatic disorders; again, the precipitated salts of the urine may be mingled with blood-corpuscles, and thus another "red sand" be present for consideration, the blood probably from the vesical or urethral mucous membrane. Now the other symptoms may, or may not, indicate the proper remedy. If they do not, to prescribe upon the symptom "red sand in the urine," the same remedy for these three cases, would be unscientific, unhomœopathic, and a leap in the dark.

You test a specimen of urine in a doubtful case and find albumen and conclude you have a case of Bright's disease. But the albumen may be from an error of diet, a slight change of habit, or the presence of blood or pus, and the kidneys be perfectly healthy. The microscope will help you to a proper diagnosis.

A patient complains of a white drop in the meatus urinarius; a glance through the lens will tell you whether it is spermatic fluid, mucus from the prostate gland, or pus from a stricture.

You can never be certain of the presence of Bright's disease, unless you find in albuminous urine the pathognomonic tube-casts, and comparisons of these, from time to time, will enable you to tell whether your patient is making progress towards recovery or death.

One of the greatest triumphs of modern microscopy is the diagnosis of abdominal fluids by the character of the cells formed therein. By their characteristics it is possible to diagnose with certainty, ascites, chronic peritonitis, cysts of the broad ligament of the uterus, and cystic tumors of the ovary.

The last practical use of the microscope in medicine, to which I desire to call attention, is for the determination of morbid growths and malignant tumors. In some cases you can satisfy yourself of the innocence or malignancy of a tumor by examining

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the discharge, or scrapings, or small fragments easily detached. After the tumor is removed, so that you can make sections and examine them critically by the microscope, you can classify it, and derive from this a certainty in prognosis, which the simple clinical characters can never furnish. The assurances which you are thus enabled to give a patient, if it prove innocent, will materially aid recovery; if it prove malignant, you can protect yourself by a guarded and grave prognosis.

The great advances made by medicine in this century, the accurate knowledge which we possess of the inception, progress, and mutations of disease, are due to our studies of histology and pathology by means of the microscope. It was the wonderfully delicate pictures of tissues and organs, presented to my gaze during a somewhat extensive course in the laboratory of the University of Pennsylvania, that led me into the ranks of the faithful. If we would be rational physicians, we should trace back by all the tools which science affords, all the phenomena of our symptomatology to the tissues, yes, even to the very nuclei which first originate them.

Thus pathological changes in tissues may be connected solidly with their vital manifestations, the *essential* symptoms may then be separated from the great amount of rubbish which lumbers our Materia Medica, and hampers and confuses the ablest of us, and homœopathy become one of the fixed sciences.

The uses of the microscope, which I have indicated, must convince you that it ought to have an important position in the curricula of our schools, and in the practice of every physician. I believe no one can practice medicine skilfully and safely without its help. The ignorant and enthusiastic symptom-monger may take exception to this statement, and not invoke its aid, but he will soon find that he is falling behind in the race for professional distinction, and losing caste with the discriminating public.

Let me urge you to turn your attention to this very interesting and useful branch of medical science. Your first examination of a dragon-fly's wing, or a group of frog's blood-corpuscles, will give you a joyful surprise; and perseverance in the work will bring many hours of unalloyed happiness, and much mental and material profit.

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VI.

MICROSCOPICAL OBSERVATIONS ON TRITURATIONS OF AURUM METALLICUM.

By J. Edwards Smith, M.D., Cleveland, Ohio.

At the last session of the Institute at Put-in Bay, I was requested by the Chairman of the Bureau of Microscopy to institute microscopical examinations of Aurum met., and to present such results as might be arrived at to the Institute.

Being deeply impressed with the conviction that the study of the metallic triturations presented a field—as yet to a considerable extent unexplored—I gladly acquiesced with the desire expressed by Dr. Alling.

Owing to circumstances entirely beyond my control, I had no opportunity to commence observations until the close of the lecture season of the medical college with which I am connected The session closed about the middle of March last, since which date, my entire available leisure time has been occupied in fulfilment of my promise.

Furthermore, after having commenced my observations, serious and unexpected demands were made on my time and attention. Ten days were entirely occupied by attendance at the Court of Common Pleas, and another week was rendered useless from an attack of sickness.

The paper herewith presented, is not therefore as full and exhaustive as I originally intended. I have, however, in the particular lines pursued, endeavored to secure as far as possible the meed of accuracy and reliablity.

With the foregoing remarks as prefatory, I now invite your attention to

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MICROSCOPICAL OBSERVATIONS ON THE BEHAVIOR OF AURUM METALLICUM.

During the past ten years, metallic gold has received considerable attention at the hands of microscopists, and as preliminary to presenting my own experiences I desire to invite your attention to a report on "The Divisibility of Gold," a paper read by Professor H. G. Hanks before the San Francisco Microscopical Society, on the evening of January 17th, 1878, a tolerably full account of which may be found in the *American Journal of Microscopy* for April, 1878.

The "material" examined by Professor Hanks, was obtained through the courtesy of the officers of the United States Mint at San Francisco, by brushing out the wooden tray in which large sums of gold coin were daily handled; the specimens thus secured were found by Professor Hanks to be mixed with much extraneous matter, such as coal, sand, fibres of wood, cotton, hairs, etc. In the endeavor to remove these by the process of washing, Professor Hanks observed that the finer particles of gold floated on the surface of the water, resisting his repeated efforts to cause them to sink. He is therefore of the opinion, that the oft-repeated statement of miners, that much free gold escapes them from this cause, is correct.

The mounts of gold, as prepared by Professor Hanks, invariably presented the metal in the form of scales measuring from .003 × .001 to .0425 × .0235.

Washings from the beach sands on the coast of Oregon were also examined by Professor Hanks, and particles of gold discovered measuring .0095 mean diameter by .00374 mean thickness (all of the measurements given being in decimals of the English inch); from a computation made by Professor Hanks, he finds that it would require 142,468 such particles to make up the weight of an ounce troy, and yet he says: "These gold particles are large, as compared with those usually found in quartz."

In the paper under consideration, we are also informed that "recent investigation naturally leads to the opinion that gold in a state of extreme division is omnipresent in the earth's crust.

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Sonstat is quoted to show that the sea-water on the British coast contains, besides silver, gold in solution, estimated by him to be about one grain to a ton of water.

Professor Hanks further states that some years ago, in Calaveras County, an old furnace—used in roasting pyrites preparatory to treatment by chlorination—was torn down, and the roof was found to be coated with gold. This he regards as proof that gold is volatile at a comparatively low temperature.

In support of the fact that gold is found associated with minerals not generally considered its associates, Professor Hanks presents many such specimens for the inspection of the society.

My purpose in thus calling your attention to the paper of Professor Hanks is to show: first, that we are not the pioneers in this line of investigation; and secondly, that the matter of the divisibility of gold particles has become a matter of interest to the scientist, as well as to benefit ourselves by the labors of our predecessors.

I now proceed with some account of my own observations.

Considerable preliminary study of particles of gold under the microscope, taught me the importance of selecting such an illumination as would enable me to recognize and distinguish very small gold particles from those of foreign matter.

A rule which would govern most microscopists, may be perhaps stated thus: A particle of metallic gold should show under the objective, using transmitted light, as a dark or black speck, while by reflected light the gold particles should assume a shining appearance, and with the characteristic colors due to the metal. Very many observations were instituted by me to discover, if possible, to what extent the above rule might be safely relied on, resulting in the conclusion that it was not at all reliable in the examinations of gold particles smaller than the $\frac{1}{2\,1\,0\,0\,0}$th of an inch. My demonstrations to this end were conclusive, and the conclusion almost amounted to disaster; for nothing further could be attempted in the way of observation until means were discovered whereby to recognize and demonstrate the gold particles up to the maximum definition of the objectives at my command. Countless experiments were tried with this end in view, including the use of the Wenham para-

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boloid, the reflex illuminator, the Woodward prism, the Beck vertical illuminator; all these, and scores of other contrivances were in turn adopted, hoping to arrive at some characteristic behavior of the metal, such as would allow its positive recognition, and in the solution of this problem which met me at the threshold, a problem, too, which had to be successfully solved before attempting further progress; more time and patience were expended on this than have been called forth in the subsequent entire study.

Necessity is said to be the mother of invention. After weeks of patient experimenting, mostly resulting in failures, I at last hit on two methods of illumination which answered the purpose admirably, so far as the recognition and detection of the gold particles were concerned, to wit:

1st. The specimen to be illuminated by condensing sunlight, on the top of the cover, by means of a concave mirror accurately posed at its proper focal distance.

This method involves the use of the most modern form of microscope stand, such as will allow the mirror to swing above the stage right or left.

The other method of illumination consists in the employment of a wide-apertured objective, to the rear of which is fitted a diaphragm with a very small aperture, say, about $\frac{1}{400}$th of an inch; the objective thus arranged, stand and objective being in position, with the mirror at about 20° from axis,—a little manipulation will allow the full solar beam to penetrate the objective and make its appearance at the periphery of the field. Objects on the stage are thus illuminated by dispersed solar light.

Of the two methods I very much prefer the latter, as gold particles are thus shown with their true characteristics, and the same can be said of such particles of foreign matter as may, perchance, be present; for instance, a minute fragment of sugar of milk will, under this illumination, appear of a milky whiteness, while a particle of gold proclaims its presence in a manner not to be mistaken. A valuable point gained is, that there is sufficient light to read the cobweb micrometer in combination with objectives of the highest powers. A disadvantage connected

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with the employment of either of the two illuminations is, that the observer is restricted to the use of sunlight.

Such measurements of particles of gold, as are given in detail in this paper, were obtained by means of the cobweb micrometer, the value of its wheel divisions being determined by the aid of an accurate stage micrometer.

Of the accuracy of this latter instrument I can speak with some degree of confidence. It is one of several, ruled especially for me by Professor W. H. Rogers, of Cambridge, Massachusetts, and is accompanied by a table of corrections (expressed in millionths of an inch), to be applied to the individual lines. I have repeatedly cross-questioned this micrometer with the view of detecting any error, and with the most satisfactory results. In this connection it may be proper to add that the majority of stage micrometers offered for sale are not reliable: this is especially true of all the imported instruments which have been examined by me; a single exception is, however, to be made, to wit, that of the Nobert test-plate.

One little fact is here worth a passing notice, namely, observers with the microscope often take great pains to procure at large cost the delicate cobweb instrument, which they are quite content to use in conjunction with the ordinary cheap imported stage micrometers; seemingly forgetting that any error in the latter will be inevitably duplicated by the former instrument.

The various mountings were prepared as follows: Two-tenths of a grain of the trituration were placed on a clean glass slide, and sufficient distilled water added to dissolve the same, the solution being kept within an area considerably smaller than the covering glass. Immediately after the solution had been effected, the slide was warmed over a Bunsen burner and the water evaporated as rapidly as possible without, however, allowing ebullition to take place. When thoroughly dry, a portion of a drop of Balsam is added, warmed, the cover slipped on, pressed down, the slide allowed to cool, and the mounting laid aside for future use.

There is something of a "knack" in this method of preparing mounts; if, during the process of evaporation, too little heat be used, crystals of sugar of milk will surely appear; if, on the

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other hand, too much heat be used, air-bubbles are formed. When, however, the operation is successfully performed, neither the crystals nor the air-bubbles are to be seen, and the dried solution becomes as clear as crystal. By this process, too, all the gold in the trituration employed is secured for examination and study.

Mountings of precipitates were prepared by simply shaking a little of the precipitate in water, Alcohol, or Ether (as the case might be), and a drop of the liquid, either instantly or after a given period, placed on a slide, dried, and mounted in Balsam.

The mountings of Aurum thus prepared for the purposes of the observations now being reported, are thirty-six in number, and may be enumerated as follows:

Dr. Conrad Wesselhœft's 1st, 2d, and 3d cent. (foil ?).

L. H. Witte's 1st, 2d, 3d, 4th, and 5th; 2 hours; metallic.

L. H. Witte's 6th, 7th, 8th, 9th, and 10th; 1 hour; metallic.

L. H. Witte's 1st, 2d, and 3d; 4 hours; metallic.

L. H. Witte's precipitate suspended in Alcohol and mounted instantly; 1 slide.

L. H. Witte's precipitate suspended in Alcohol and mounted after 24 hours; 1 slide.

L. H. Witte's precipitate supended in Ether and mounted after 24 hours; 1 slide.

L. H. Witte's water by Phosphorus after 1 week; 1 slide.

Boericke & Tafel's 1st, 2d, 3d, 4th, 5th, and 7th; 2 hours.

Boericke & Tafel's 1st, 2d, and 3d.

Smith's New York 2d, 4th, and 6th.

(All of the above, save the 1st, are decimal triturations.)

Witte's crude precipitate mounted in bulk; 1 slide.

Witte's preciptate in Alcohol, lashed to piston of steam-engine and shaken for 24 hours; 1 slide.

Witte's precipitate in water, lashed to piston of steam-engine and shaken for 24 hours; 1 slide.

Witte's precipitate by Phosphorus, 1^x and 3^x triturations.

With the view of rendering my observations as intelligible as possible, I have prepared drawings, made under the microscope, by the aid of the camera lucida, of twenty-four of the above-named mountings. These are drawn under a uniform amplifi-

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cation of 1500 diameters, and to each drawing the micrometer scale of thousandths and ten-thousandths of an inch is annexed, thus allowing the particles of gold to be estimated with tolerable accuracy. Several of these drawings will be passed around during my remarks, to serve the purpose of illustrations; and I here improve the opportunity to say that I have brought all my mountings with me. These can be seen at any time during the session of the Institute.

I now offer for your inspection drawings of the 1st, 2d, and 3d triturations of Aurum metallicum. The mounts from which these drawings were made were kindly presented to me by C. Wesselhœft, M.D., at the session of the Institute held at Put-in-Bay last year. In these mounts the gold appears in the form of flakes, and the triturations are evidently made from the foil. I am prepared to demonstrate, beyond the ghost of a doubt, that the particles of Aurum exhibited in the drawings, as well as others, contained in the mounts, are particles of solid gold. The particle shown in the 1st trituration has for a long diameter $\frac{1}{3\frac{1}{2}}$d, and for its short diameter, $\frac{1}{500}$th of an inch. The large particle in the 2d trituration has for an average diameter, $\frac{1}{500}$th of an inch, while the large particle in the 3d trituration will not vary far from $\frac{1}{700}$th of an inch. The smallest particles shown in the 2d and 3d triturations, are not smaller than $\frac{1}{10000}$th of an inch, and but few of these smaller particles are to be observed in any of the mounts. It is, however, possible that very small particles of gold may have eluded my detection, while drawing through the aid of the camera lucida.

I have next to present to you a drawing of Aurum foliatum, 2^x trituration. This trituration was prepared at my request, by Mr. Witte of this city. In this trituration the gold appears in the form of aggregations of little spheres, measuring not far from $\frac{1}{20000}$th of an inch. In this trituration, also, it must be remembered, that the very smallest particles of gold may have eluded my observation. This remark will hold good in all observations made through the camera lucida.

Granting that the drawings presented are a tolerably faithful representation of gold particles, as seen under the objective, I think it will be admitted that the triturations of Mr. Witte are

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decidedly superior to those of Dr. Wesselhœft; and, furthermore, that it would be desirable that triturations nominally the same ought not to exhibit such wide discrepancies under the microscope, for it surely occurs that the physician prescribing the Aurum 2d of Dr. Wesselhœft is using gold in altogether a different shape and form from him who prescribes the Aurum 2d as furnished by Mr. Witte.

It is proper here to remark that this 2^x trituration of Mr. Witte's was made for me, at my particular request. I made this request feeling sure that triturations from the leaf gold would fall behind those made from the precipitated metal. This is, as I understand, generally accepted as a fact. It was due, therefore, to Dr. Wesselhœft, accepting that his specimens were prepared from the leaf, that his triturations should only be compared with the triturations of others made from the leaf.

I may here state that in the same conversation with Mr. Witte, during which I requested him to prepare triturations from the leaf, Mr. Witte was in full accord with the prevailing opinion. Mr. Witte felt positively assured that the best triturations from the leaf would fall far behind those from the precipitate. My own notions were that in triturations from the leaf gold, the gold would certainly be found in metallic flakes, similar to those shown in the triturations of Dr. Wesselhœft.

The microscopic examination of Mr. Witte's 2^x trituration of Aurum from the leaf brought to the surface two facts, either of which, I am sure, are capable of demonstration. First, this trituration is not far behind triturations made from the precipitate; and, secondly, the gold is not in the form of flakes; but, as has already been stated, it appears in aggregations of little spheres or spherules, closely resembling, if not identical with, appearances obtained in the examination of triturations from the precipitate. It, therefore, occurs that my observations do not tend to support those of Professor Hanks, already quoted.

Next, I present for your inspection, the following triturations, viz., L. H. Witte's Aurum met., 1st, 2d, and 3d, two hours; also his 1st, 2d, and 3d, four hours; while for the sake of comparison I will also hand you Messrs. Boericke & Tafel's 1st, 2d, and 3d,

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four hours; together with Smith's 2d, and 4th: all these are from the precipitate, and all are decimal triturations.

In all these drawings the same fundamental principles may be traced, to wit: In each, the gold appears in the form of little spheres aggregated together in larger and smaller colonies; the diameter of the larger spheres which I have measured is about $\frac{1}{21000}$th of an inch, the diameter of the smaller spheres is about $\frac{1}{52000}$th of an inch; after having made many measurements I finally accepted $\frac{1}{24000}$th as an average measure. Repeating what I have already said, I remark that it is quite possible that in these camera drawings I may not have observed particles smaller than those measuring $\frac{1}{24000}$th.

Confining ourselves now to the general behavior of the gold particles, I think you will notice that it is much the same in all the triturations before you, to wit: The effect of the mortar and pestle seems to break up these *aggregations* of spherules, while the effect of the attenuation is simply to reduce the amount of gold present, the average diameter of the individual spherule remaining about the same throughout all these triturations.

It is eminently the duty and business of the scientist to present prominently, and in the most salient manner, the weaker points inherent in any investigation. It is therefore proper to inform you that it would be possible to produce drawings in some respects dissimilar from one and the same mount; in no one of my mounts is the gold equally and regularly deposited. By simply moving the slide on the stage, it was possible to get fields exhibiting larger or smaller "aggregations," and it must be kept in mind that a field made up of the smaller aggregations uniformly distributed throughout the field would make the better show on paper. The drawings presented have been made from average fields, and in the selection of such I have endeavored to exhibit the actual facts. Leaving out of consideration any errors resulting from the improper selection of fields, I have to claim that the drawings do give a truthful idea of the general behavior of the gold aggregations, as well as tolerably accurate measurements of the individual spherules.

My observations also include examinations of Witte's Aurum 6th, 7th, 8th, 9th, and 10th decimal. In these higher attenu-

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ations the behavior of the gold is very much the same as before mentioned, viz., in the higher attenuations the colonies or "aggregations" become more and more broken up and dispersed, while the quantity of gold grows less and less; for instance, in the 10^x trit. not more than six to eight particles of gold can be eeen in any one field, while in the same trituration fields might be presented containing not more than two or three particles. Again, it might be possible to find fields displaying one or two little "aggregations" of two or three spherules each.

Measurements of Witte's triturations from the 6^x to the 10^x inclusive, gave as follows.

Witte's 6^x, smallest particle $\frac{1}{40000}$th, average particle $\frac{1}{24000}$th.
Witte's 7^x, smallest particle $\frac{1}{40000}$th, average particle $\frac{1}{24000}$th.
Witte's 8^x, smallest particle $\frac{1}{40000}$th, average particle $\frac{1}{24000}$th.
Witte's 9^x, smallest particle $\frac{1}{40000}$th, average particle $\frac{1}{24000}$th.
Witte's 10^x, average particle $\frac{1}{24000}$th, smallest particle $\frac{1}{40000}$th.

This much for the triturations as far upwards as the tenth. I now invite your attention to observations of gold precipitated from solutions of the chloride; such precipitates are found under the microscope to consist of the same little spherules aggregated together in vast numbers, the smallest particle measuring $\frac{1}{32000}$th, an average particle measuring $\frac{1}{24000}$th of an inch.

I take a little of this precipitate, add to it a little Alcohol, and after shaking the same vigorously for a moment or two, I instantly mount a drop of the liquid. Here again I find the same spherules in large numbers, the smallest particles measuring $\frac{1}{32000}$th, and the average particle measuring $\frac{1}{24000}$th of an inch, precisely as was the case with the crude precipitate.

These measurements are precisely the same as those quoted for the 1st, 2d, and 3d decimal triturations, a fact which has significance.

In a similar manner I take a little of the crude precipitate, add a little Alcohol as before, shake vigorously, and lay aside for twenty-four hours. I then mount a drop or two of the supernatant liquid, again I find the little spherules of gold, the smallest measuring $\frac{1}{40000}$th, and the average $\frac{1}{24000}$th of an inch.

Once more. I now take a little of the precipitate and add a little Ether, all the other conditions remaining the same as in the

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last experiment. Result: Again, I have the little spherules of gold, the smallest measuring $_{4}\frac{1}{0000}$th, and the average $_{24}\frac{1}{000}$th of an inch.

In either of the last two instances we find gold as nicely divided as in the 10th decimal trituration.

I now take two small bottles, placing a little of the precipitate in both, to one I add a little Alcohol, to the other I add a little Ether; these I lash to the piston of a steam-engine after corking tightly, and thus subject them violently for a couple of days, the engine being kept in constant motion during this interval. The object of this proceeding being to ascertain, if possible, whether the constant agitation might not break up and subdivide the spherules. The result, having duly mounted a drop or two of the supernatant liquid, was that the gold spherules measured the same as in the two last experiments, to wit: smallest spherule $_{4}\frac{1}{0000}$th, average $_{24}\frac{1}{000}$th of an inch. Thus it seems to appear that nothing was gained by the shaking process.

The final experiment, and one pregnant with significance, to which I desire to invite your kind attention, was suggested by Mr. Witte, pharmaceutist of this city; the chemical manipulations were, in fact, performed by him, and may be thus described.

Ten or twelve grains of pure Chloride of gold were dissolved in five pints of distilled water, the gold being subsequently thrown out of solution by the addition of a solution of Phosphorus. A little of the gold thus thrown out suffers precipitation, while most of it remains suspended mechanically in the vehicle, which now assumes a purple color, and so remains for several days.

A drop or two of the purple liquid (the "amethystine fluid" of Faraday) I now take and evaporate on a clean glass slide and examine under the microscope, under a medium objective. The glass slide appears to be beautifully *gilded* by a deposit of metallic gold, consisting apparently of infinitesimally minute particles; the deposit, in point of thickness, is not even, being thicker in some places than others, presenting a "watered" appearance, somewhat similar to watered silks, with which most of us are familiar.

Examined under a high power the same little spherules of

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gold are instantly recognized, which, on being measured, are not found to be smaller than other precipitates examined in suspension; in fact, I cannot detect any difference in the measures, the smallest spherule measuring $\frac{1}{40000}$th, the average being $\frac{1}{24000}$th of an inch. Precisely the same figures as I have had occasion to quote before. But I am of the opinion that the proportion of the smaller and smallest spherules is much greater than in any other mount of metallic gold thus far examined by me. The deposit, too, as compared with other specimens is beautifully even.

Mr. Witte is now engaged in a series of experiments hoping thereby to recover the gold thus held in suspension and, at the same time, to preserve the quality exhibited by the microscopic examinations. The gold thus recovered will then be subjected to trituration.

In this connection allow me to say that I have lately received from Messrs. Boericke & Tafel specimens of their late triturations of Aurum. These, they tell me, are superior to their former efforts, and they further add that they are now using precipitates obtained by Phosphorus. I have had no time to devote to the examination of these late triturations, but shall attend to them at an early day.

I may here remark, that it is quite possible to judge of the lower triturations of Aurum met. by the naked eye, that is to say, so far as the evenness of the distribution of the gold particles is concerned. It is I believe accepted by the pharmaceutist, that the darker the color of the specimen, the better the trituration; the last samples received from Messrs. Boericke & Tafel, are very much darker than those first sent me.

The foregoing comprises all that I originally contemplated including in this report, since writing which, however, Mr. Witte informs me that he has succeeded in recovering the gold held in suspension by Phosphorus, from which he has made 1st, 2d, and 3d decimel triturations, samples of which he kindly handed me yesterday, the 20th day of June.

To the naked eye the triturations were so far unlike his former samples, I could not resist the temptation to make some hasty examinations of them under the microscope, as well as to make

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drawings of the 1st and 3d, which I now present for your inspection, and also samples of the triturations themselves. You will notice that the 1st decimal is nearly a slate color, with a warm purplish tint; while the 3d is darker than any trituration as made six months ago. Hence, if we accept the rule commonly recognized by the pharmaceutist, we need no microscope to enable us to pronounce on the quality of these later triturations.

On examination under the objective—necessarily made with undue haste—I feel tolerably sure that in the evenness of the distribution of the gold particles these late samples are superior to any which have been examined by me, the "aggregations" of the spherules are much more dispersed, and the formation of the aggregations lighter and more flocculent; these characteristics are, I think, tolerably well shown in the drawings. As to the size of the individual spherules, I cannot now state with accuracy, but I am satisfied at least that they are no larger than the measurements obtained from the previous triturations.

In conclusion, may I be allowed to say that the investigations thus related, which have absorbed considerable of my leisure time during the past vacation, in the recital of which I have had the honor to receive your attention, have opened to me a line of study which I can but regard as of vital importance to our profession; and have resulted in convictions—to my mind at least—that the study of our triturations has not only a legitimate place, but it is imperatively demanded.

With regard to the question as to the ultimate division of gold, I have nothing at this writing to report; the problem with me thus far is, what testimony has the microscope to offer concerning the behavior of gold during the process of trituration, be the capacity of the instrument what it may?

The object-glass employed in the preceding investigations was a modern "duplex" immersion system, having *balsam* aperture of above 100 degrees; the resolving and defining powers of this objective are well known to microscope experts. This glass resolves with ease all of the severest known tests, such as the Nobert 19th band, the amphipleura pellucida, as also the Fasoldt and the

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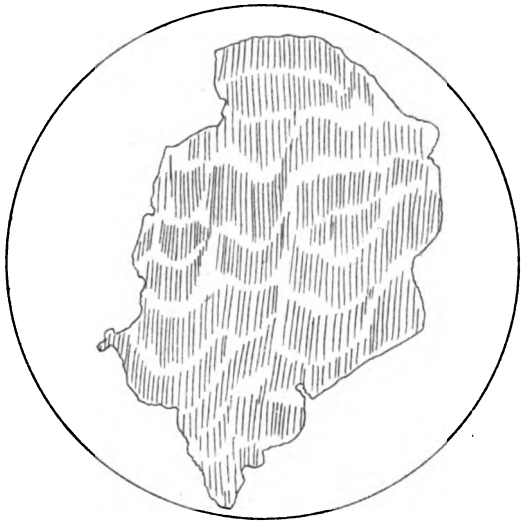
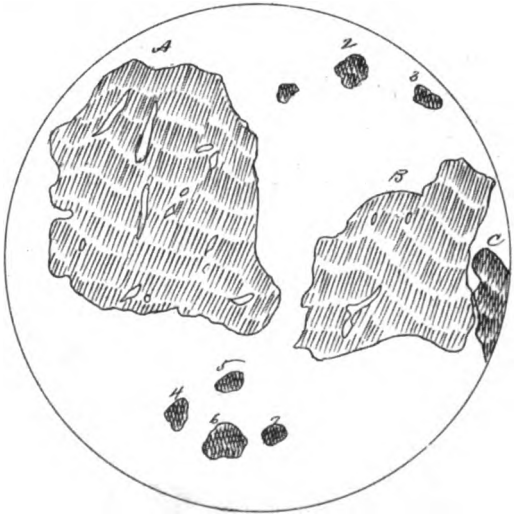
Dr. Conrad Wesselhoefts Aurum 1st. Gold in Flakes.
One particle in the field. (Cont)



Dr Conrad Wesselhoefts 3x Trituration of Aurum
Two Fields Combined. This largest particles in one Field = A. B & C.
Nos 1. 2. 3. 4. 5. 6 & 7 show the smallest " observed in this Test.



W.J. Morgan & Co. Photo Lith. Cleveland O.

60 50 40 30 20 10 0

Scaled 10/1000ths of an inch

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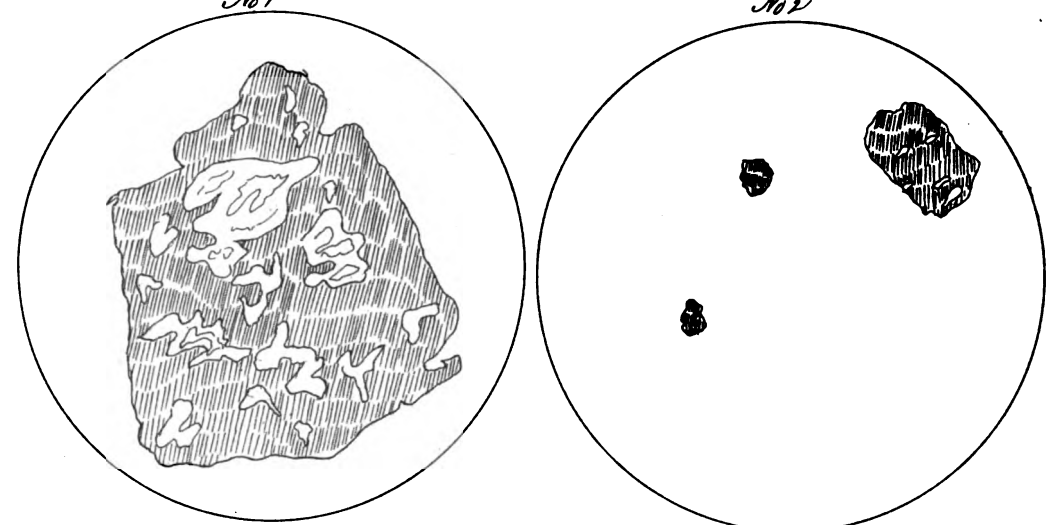
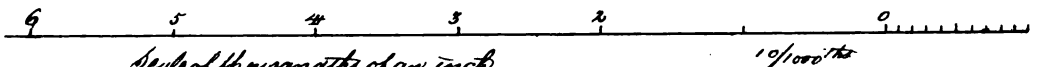
Dr. Conrad Wesselhoeft 2d Inhalation of Uterus (Cont)

No 1. Shows field containing but one large particle - No 2 shows 3 small particles in field

No 1

No 2





Scale of thousandths of an inch

1/1000 ths

W. J. Wright & Co. Photo Lith. Cleveland O.

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Dr. Conrad, Wesselhoft's 1st Tint of Aurum, showing two of the larger & also the Smallest Particle Observed, (Cont Fabrication)

Note. The particles. A. B & C, were the only Gold seen in 3 consecutive fields. these surfaces being covered with patch like markings as sketched below

Scale of Thousandths of Eng. inch

W. J. Morgan & Co. Photo Lith. Cleveland O.

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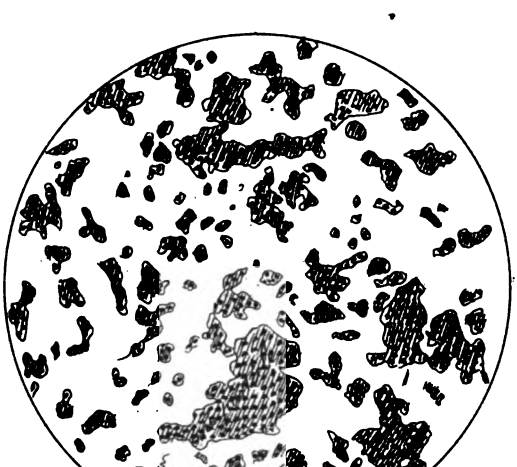
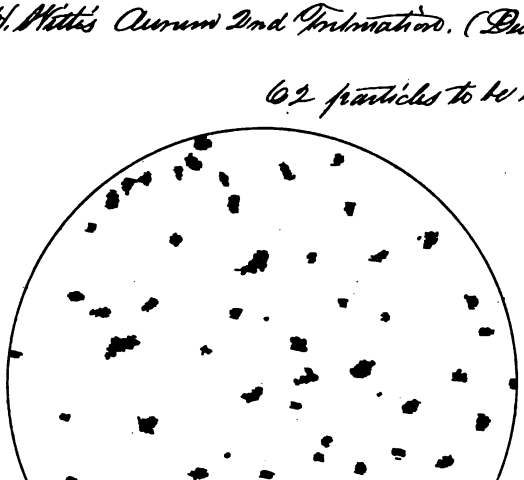
L. M. Watts Aurum 10 2 hours.



L. M. Watts Aurum 2nd Termination. (Decimal).

62 particles to be seen –



W. J. Morgan & Co. Photo Lith. Cleveland, O.

Scale of Thousandths of an inch 10/1000 in.

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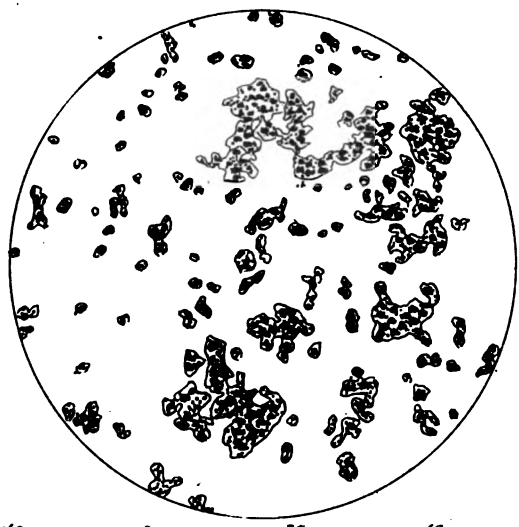
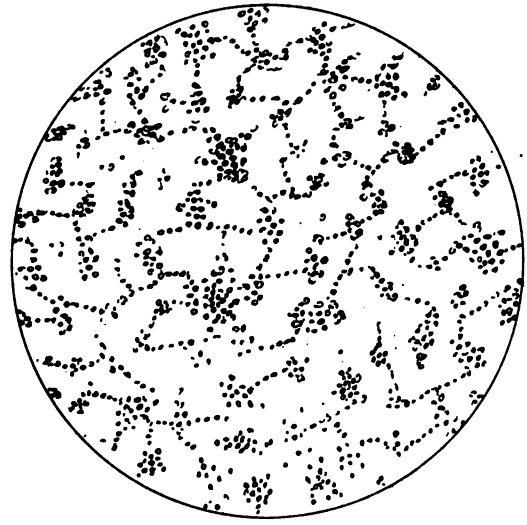
L. Ylo. Wattes. Aurum °Fol. 2nd Decimal Trituration.



50 40 30 20 10 0

Scale of 10/1000 ths of an inch.

Gold. Suspended from solution of the chloride, by admixture of Ether and Phosphorus.



W. J. Morgan & Co. Photo Lith. Cleveland O.

50 40 30 20 10 0

Scale of 10/1000 ths of an inch —

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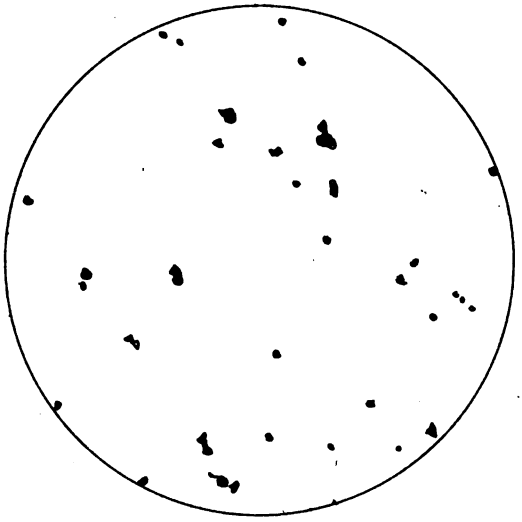
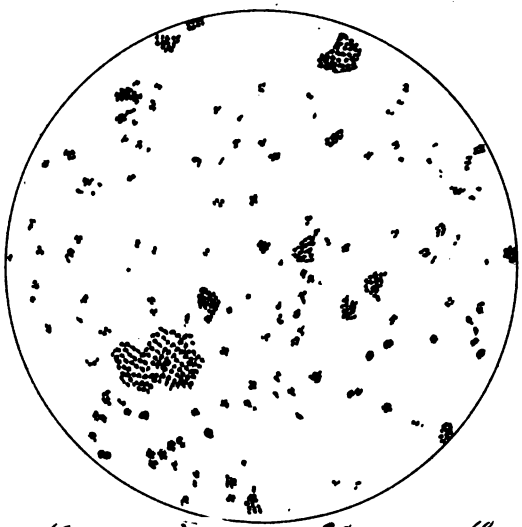
S. H. Wittes 3rd. decimal Trituration of Aconum.
35 Particles in the Field

4 hours.



Smith's 2nd. Decimal Trituration of Aconum,



W.J. Morgan & Co. Photo Lith. Cleveland O.

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Scale of 10/1000ths of an inch

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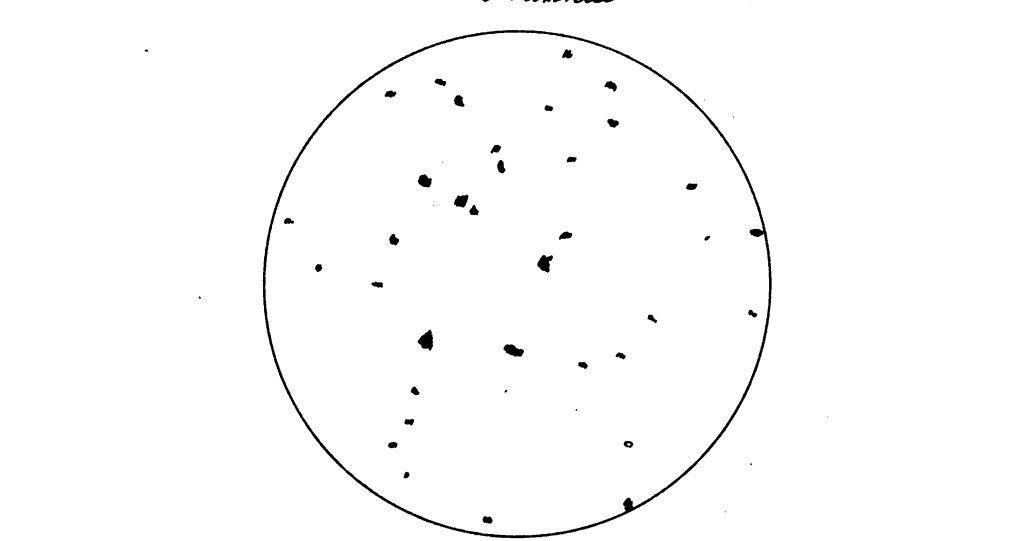
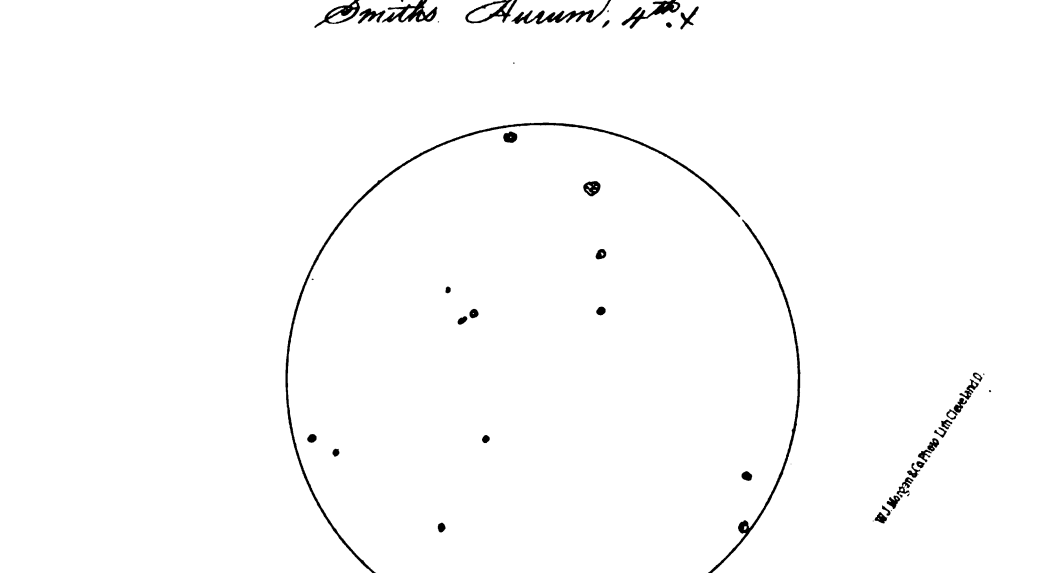
L. H. Watts 3d Intimation (2 hours) of Aurum,

33 Particles to be seen



Scale of 10/1000ths of an inch —

Smiths Aurum, 4th.



Scale of 10/1000 ths. of an inch

W. J. Morgan & Co. Photo Lith. Cleveland O.

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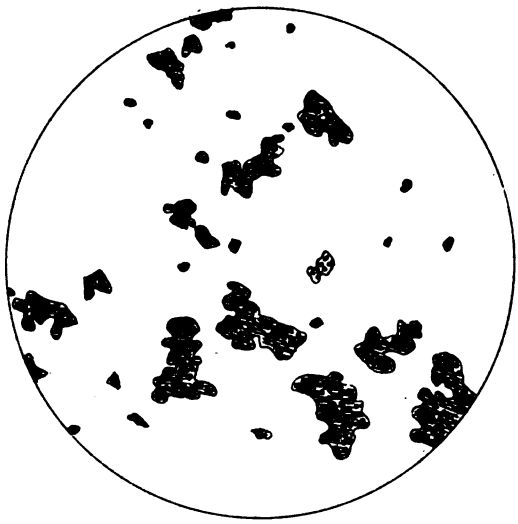
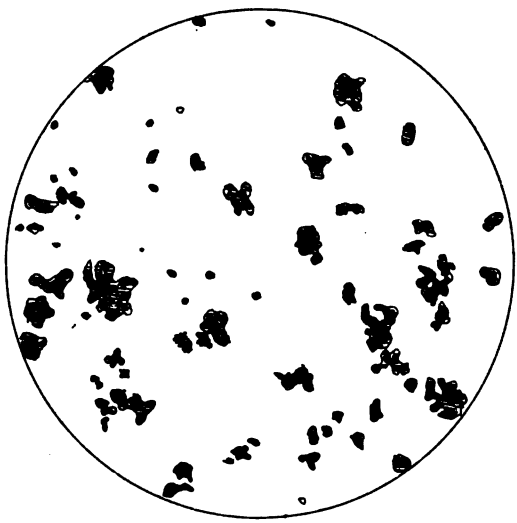
L. M. Wilcox 1st decimal Intensation of Aurum,
34 Particles in the Field

4 hours.



L. M. Wilcox 2nd decimal Intensation of Aurum,
69 Particles in the Field

4 hours



Scale of 10/1000 ths of an inch

W. J. Morgan & Co. Photo Lith. Zanesville O.

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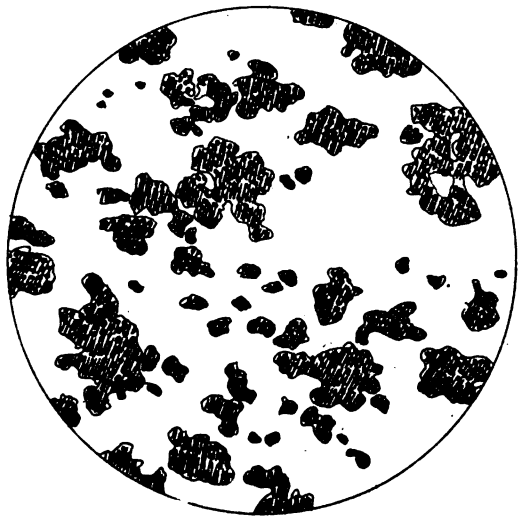
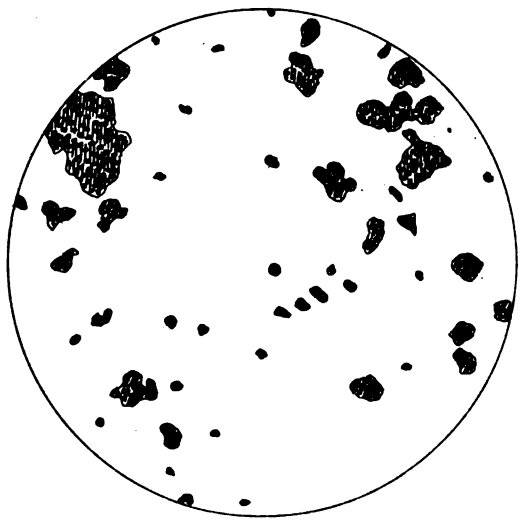
Boericke & Tafels 1st Decimal Intruation of Aurum. —
57 Particles in the Field

4 hours



Boericke & Tafels 2nd Decimal Intruation of Aurum,
51 Particles seen in the Field

4 hours



Scale of 1/1000 th.

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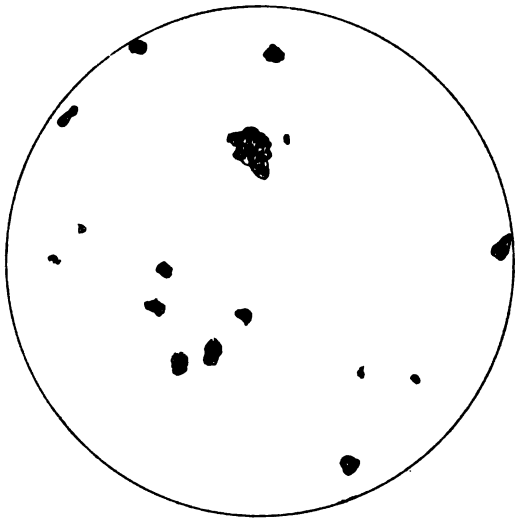
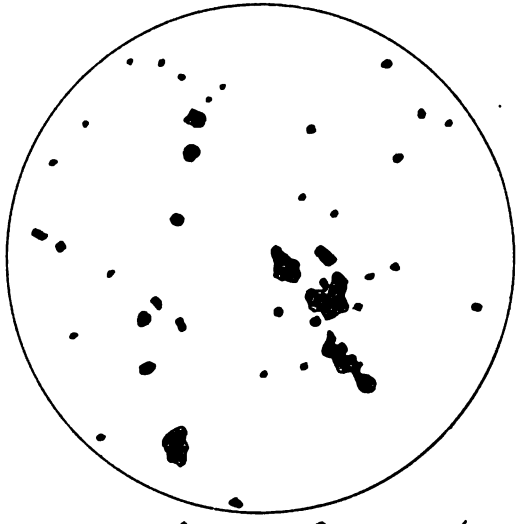
Boericke & Tafels. 3rd. Decimal Trituration of Aurum,
15 particles in the Field

4 hour—



Boericke & Tafels 4th Decimal Trituration of Aurum.
38 Particles in the Field —

2 hours—



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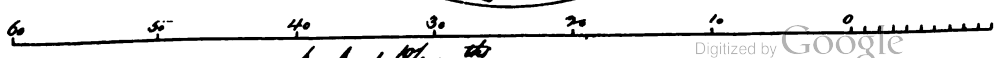

Scale of 10/1000 ths.

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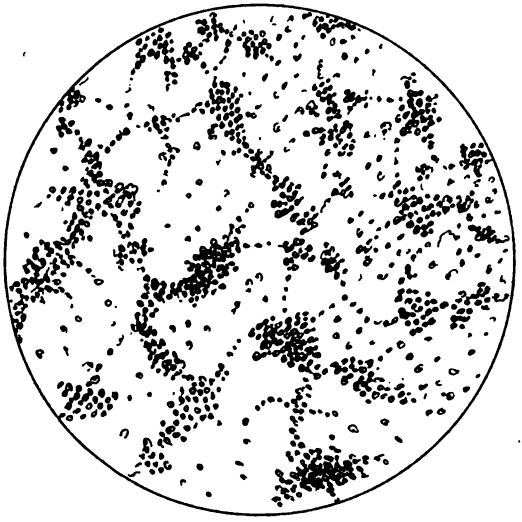
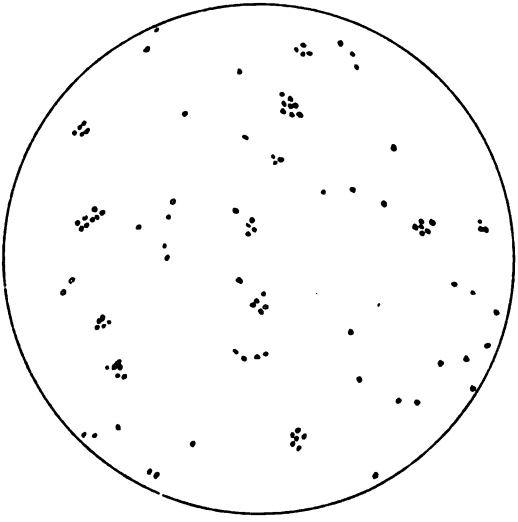
Aureum 1st × from particles suspended from solutions of the Chloride



Aureum 8th ×. from particles suspended from solution of the Chloride



W. J. Morgan & Co. Photo Lith. Cleveland O.

30 20 10 0

Scale of 1/1000 of an inch

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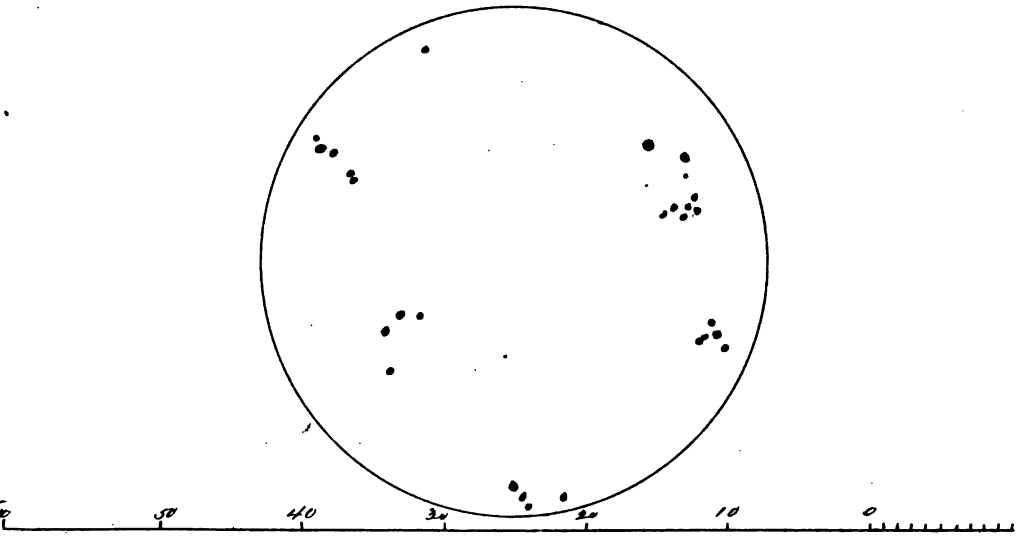
Aurum Precipitato, Shaken in Alcohol and mounted after 24 hours.

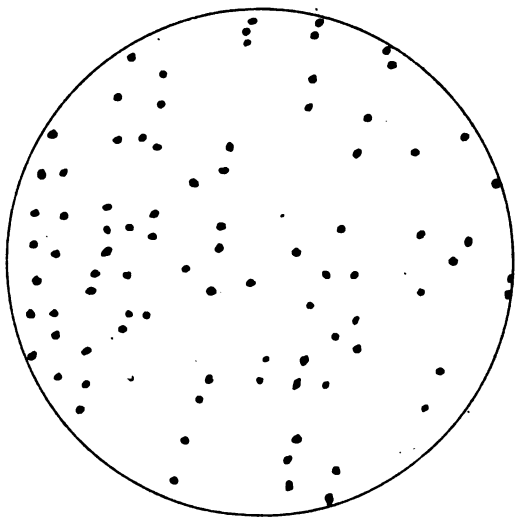


Scale of 10/1000ths of an inch.

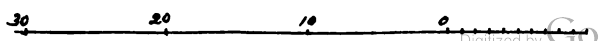
Aurum. Met. suspended in Ether.

one-half grain, in 150 grains of Ether. after 48 hours.

87 Particles in the field (seven drops mounted)



W.J. Morgan & Co. Printers 1 & 3 St. Cleveland O.



Scale of 10/1000 of an inch

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Rogers test-plates, both the latter being ruled to $\frac{1}{120000}$th of an English inch.

I have presented prominently the fact that the use of the camera lucida might possibly prevent the observation of the smallest particle of gold present; diligent search has, however, been instituted for those discarding the camera, and substituting in place thereof the delicate manipulations called for by severe tests, such as those enumerated, and I have thus far seen no particle of gold smaller in its superficies than the figures presented in the preceding paper.

In general, I know of no good reason to urge, why the superb objective used by me in the observations herein related, should not have detected particles of gold as small as $\frac{1}{100000}$th of an inch, had such particles been present.

Furthermore, attention is earnestly invited to the fact, that my investigations were confined to the behavior of gold *under the pestle*, or from particles otherwise obtained, as has been duly set forth; my results then are only comparable with those of other observers, the same limiting conditions being strictly maintained.

In this connection it may be proper to add that I have not been unmindful of the fact, that it has been claimed that gold can be *beaten* into films as thin as the $\frac{1}{280000}$th of an inch. Again, silver wire may be gilded, and subsequently the wire drawn out; probably by this process the gold coating may become very thin indeed. *How* thin, is a question still *sub judice*. Estimates thus far presented by "authorities" differ widely, and in truth are not to be accepted until modified or confirmed by further observations. Whatever may be the ultimate result arrived at, its bearing will not affect the behavior of gold *under the pestle*.

NOTE BY THE AUTHOR.—The following plates have been reproduced to half-sizes by the photolithographic process, hence it occurs that the gold particles appear as if amplified 750 diameters; the micrometer scales having been also reduced one-half, their value is not impaired. J. E. S.

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VII.

ON THE GERM THEORY OF DISEASE.

By C. P. Alling, M.D., Bradford, Pa.

Associated with many of the infectious diseases may always be found minute parasitic growths called fungi or germs, every disease being characterized by its own particular or specific forms. They are present in the blood and in the morbid products of the disease. It seems that no satisfactory classification has yet been made, as no two writers adhere to the same nomenclature in speaking of them. In general terms they are called bacteria, referring to their rigid, rod-like form; or vibriones, on account of a vibrating or undulating motion some of them possess.

Of the many varieties there is none more common than the bacterium termo, whose spores are known as micrococci, and it is a rare thing to find one of these forms without the other, being different stages of development in the same fungus. The bacterium termo varies in size from $\frac{1}{8000}$th to $\frac{1}{12000}$th of an inch, and in thickness from $\frac{1}{12000}$th to $\frac{1}{50000}$th of an inch. The spores are much smaller. They are both capable of spontaneous movement, and it is by their motility that they can be recognized with low or medium powers of the microscope. Ordinary powers from 800x to 1500x are required to show them properly; much greater amplification is necessary to bring out their form. With 5000x and good definition they are seen to be composed of two oval segments, and are provided with a delicate flagellum at either extremity.

Other varieties resemble bacterium termo so closely in form and structure that it is quite impossible to distinguish them except by their behavior under different influences; for example,

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their power of resistance to different degrees of temperature, or their ability to live and propagate in vacuo, or even in carbonic acid.

Concerning the relation these organisms bear to the cause of disease several theories obtain, and there are not wanting distinguished observers, whose opinions justly command respect, to maintain views radically unlike regarding the question.

It is claimed by one class that the germs are to be regarded as only the vehicles by which the germs of disease (whatever they may be, but always invisible) are transmitted. Thus Dr. Burdon Sanderson says: "So far as the morphologist is concerned, germs have quietly gone out of court, and given place to things which are ultra-microscopical—to molecular aggregates—of which all we can say is that they occupy the border land between the *living* and *non-living* things."

Dr. Richardson claims that "the poison of various communicable diseases are modified *secretions*, and these, though products of living organs, are not themselves living, but really *dead* matter, and that different diseases are caused by secretions of different glands."

It is held by many that septicæmia, as it often occurs in diphtheria, may be directly traced to the absorption of oxygen by the bacteria, which exist in the blood in immense numbers, and the consequent retention of carbonic acid. In proof of the view is urged the similarity observed between the symptoms of septic poisoning of the brain and those of asphyxia.

Another class of observers and by far the most numerous, believe in what is called the mycetic theory, claiming that these germs, *per se*, are the material and efficient cause of disease. Such names as Pasteur, Chamberland, Dallinger, and Dr. Drysdale, Oertel, and others may be mentioned as adherents to the mycetic theory. These observers are known as among the most reliable who have given their attention to this field of investigation. Their close and careful inspection of fungi in the various diseases seems to prove that, however near the resemblance may be to the casual observer, familiarity with their habits and forms strengthens the idea that they belong to entirely different varieties, and that different diseases are not

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caused by one and the same organism,—so far giving color to the mycetic theory.

Diphtheria is an infectious disease that is invariably accompanied by the presence of micrococci and bacteria, the well-known bacterium termo.

According to Oertel, "diphtheria does not exist" without these. This disease is proven to be first local, and afterward constitutional in its mode of invasion, unlike diseases in which this order is reversed, the local lesions following a general invasion of the system—inoculation always exhibits its first effects at the point of inoculation—in some cases many hours before any constitutional symptom can be detected.

The germs of bacteria, by means of which, at least, the diphtheritic poison is communicated, float in the infected air. By the act of inspiration they are drawn to the entrance of the air-passages where they find convenient lodgment upon the moistened surface of the fauces. It may be noticed that the initial lesion nearly always occurs at a point where the cutaneous and mucous surfaces come together, it being only in extremely rare cases that the internal viscera, as the stomach, are thus attacked. The fauces, nares, anguli oris, and anus, being thus situated, are common loci for the first assault, and this shows quite conclusively the local nature of the affection at the beginning. Diphtheria is known to have a period of incubation varying from one to three or four days. In cases where the poison has been artificially inoculated, and there could be no doubt about the moment of infection, such a period of delay has invariably followed before constitutional symptoms were developed. In recent cases the first examination of mucus from the fauces within a few hours after infection, shows only a few bacteria, a few free micrococci, and a considerable number of large corpusculous cells filled with spores. I have thus noted in a field $\frac{1}{100}$th of an inch in diameter as many as 15 or 20 such cells, containing, at a moderate estimate, at least, 10,000 spores each. At this time examination of the urine and blood shows neither bacteria or spores. Subsequently, however, the blood and various secretions may be seen swarming with them.

I now approach the practical part of the subject. An early

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microscopical examination of the secretion formed in the throat, should be made in every case that is known to have been exposed to the influence of the poison. If the fungi are found, topical treatment should be applied without delay, to prevent, if possible, general infection of the system. The remedies from which I have had best results are the preparations of Chlorine, Chlorate of potassium, Chloride of sodium, Hydrochloric acid, Chlorine water, and Muriated tincture of iron.

That this method is based upon good sound common-sense has been fully demonstrated to my mind by a score of cases that have fallen under my observation. With your favor I will mention one such case somewhat in detail.

In February last I was called to attend Walter A——, aged five years, who had a severe attack of diphtheria. There were in the house two other children, one, a girl, seven years old, the other a babe of eighteen months. Repeated examinations of the mucus from the girl's throat were made, and on the second day I found therein a few micrococci. At the same time they also appeared in the fauces of the babe. I prescribed a gargle of Hydrochloric acid to be used frequently, and ordered, as is always my custom, the strictest quarantine. In the case of the girl, who was seven years old, my directions were carried out, and no general infection occurred. In the case of the babe, from the difficulty in using the throat wash, it was omitted after one or two attempts, and in two days' time the little fellow was prostrated by a fully developed attack of the disease, from which he died three days after.

I might mention a number of other cases quite as conclusive, but the one narrated was well known throughout the city where I reside, and has been related just as the facts occurred. Some difficulty is often experienced, especially by the younger members of the profession, in the differential diagnosis of diphtheria. Not seldom the cheesy degeneration of the follicular secretion found on the fauces is mistaken for diphtheritic membrane, and a sad and unnecessary anxiety is excited in the minds of patient and friends, while the attendant only gains a cheap and fictitious fame for the cure of diphtheria, when he has only a simple de-

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parture from normal secretions to treat that would soon recover spontaneously by attention to the ordinary laws of hygiene.

When I hear physicians boasting of their wonderful success in the treatment of diphtheria, not losing a single case, perhaps, I cannot help suspecting that a mistake of the kind mentioned may possibly have been made. Examination of the deposit with the microscope would remove any chance for mistake by showing entire absence of bacteria and their spores.

The progress of the disease may also be accurately determined by a microscopical examination of the blood, or some one of the easily obtainable secretions. The urine is a convenient element upon which to make the examination.

It was not my purpose to speak of the different forms of diphtheria or of the general treatment of the disease, but I wish chiefly to direct the attention of our homœopathic brethren to the value of the microscope in practical medicine, as it is so generally recognized by the other branch of the profession.

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APPENDIX.

DISCUSSION.

SECOND DAY—MORNING AND AFTERNOON SESSION.

DR. T. F. ALLEN, of New York: Mr. President and Gentlemen: I did not intend to make any remarks on this bureau, but the views of Dr. Alling, in his paper, appear to call for some objection. He premises his paper by a statement that seems to me very erroneous. That each disease possesses its own peculiar fungus as the exciting cause, is utterly false and untrue. In the first place there are but two diseases known which seem to have peculiar species of fungus connected with them. One is relapsing fever, and the other splenic fever. Now in neither of these diseases are these fungi observed at the onset. In splenic fever they do not make their appearance in the blood until the third or fifth day, and in every case they do not appear until after the disease has affected the system for some hours or days. Again, it appears conclusively proven by experiment that septic poison may be prepared in such a manner as to contain no bacteria, and as far as the microscope can demonstrate, no germs of disease whatever; and in these very diseases which seem to be exceptions to the law of "no germs" the cause of the disease has yet to be shown. Nay, more, there is a probability that a crystalline substance, *sepsin*, is the cause of disease associated with swarming bacteria in the decomposing fluids of the body. The adherents to the germ theory are not as numerous as formerly; indeed it is generally accepted that the theory is without a scientific basis.

Take, for instance, diphtheria. It is said that the bacteria cause the disease, and that the presence or absence of these and other minute organisms determine the nature of the pathological process in the tissues. Now the scrapings from any furred tongue, the exhalations of a foul breath, will show an abundance of bacteria, identical with those to be found on the membrane of diphtheria, and any slough exposed to the air will in a few

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hours become covered with a mould and various forms of low organisms. These are the natural consequences of putrefaction in disease. Dr. Drysdale's work is exceedingly able, perhaps the best work of the kind in our language, but even he is not prepared to admit the presence of a distinct organism for each disease; he distinctly states that there are but two diseases in which these organisms can be proved to exist in the blood. Dr. Lewis, of Calcutta, has made many series of experiments. He injected moulds grown from cholera dejections into the system, endeavoring to establish their power to reproduce the disease. He failed. He ascertained that they were only ordinary moulds, such as are found on bread and cheese, present in the decomposing animal matters, because these matters were devitalized and the tissues degenerated; these moulds were not the *cause* of the disease.

DR. OWEN, Cincinnati, Ohio: Mr. Chairman and gentlemen: There is one point in regard to the paper read by Dr. Alling to which I desire to take an exception. In conversation with Dr. Alling I understood this point precisely, and I desire now to correct a false impression, which has crept in concerning it. He quotes Oertel as being authority for saying that we never have diphtheria except we have bacteria with it. Now Oertel distinctly states the opposite of this, namely, that diphtheria is essentially a catarrhal affection, and he gives us the history of its course. The patient, he says, had large swellings about the throat and mouth. Oertel says there is a variety which covers the diphtheritic deposit, because it takes place beneath the epithelium, and not like croup, which is upon it. It takes place beneath, and is covered, and until abrasion of the epithelium there can be no deposit of bacteria. There is a septicæmic condition produced as the result. There is no such thing as septicæmia from diphtheria. He further goes on to say that the diphtheritic membrane may be swept off before the membrane is abraded and the mucous membrane underneath will appear perfectly natural. Immediately upon the removal of this membrane it is covered by another deposit, which I suppose you all have had an opportunity of observing. If you sweep off the diphtheritic membrane at any time, in a very short time we shall have another deposit. Hence the objection to all those crude irritating substances, or those which are difficult to remove from the membrane.

The chlorides are suggested as proper. I think they are the only safe and sure ones. If you will take portions of the membrane and expose them to one of the preparations of Chlorine, and the Chloride of gold and Hydrochloric acid, or any substance

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containing a considerable quantity of Chlorine, the membrane will present itself to the water solution in a few minutes. The chloride of the metal is the most efficient agent I have ever found in my experience. I have never lost a case with diphtheria. I rely upon this plan to dissolve the membrane with the least irritating substance that can possibly be applied to it. From three to four days is the duration of this treatment.

DR. ALLING: I quoted from Oertel only his words. He says, in so many words: "Without bacteria, diphtheria does not exist." That is his expression, or the correct translation of it. In regard to Dr. Drysdale, I did not quote him as saying distinctly that the bacteria or germs found in different diseases are different. He does claim that in splenic fever and in relapsing fever they are essentially distinct. He, however, says enough to carry the inference that he does not reject the idea that they are dissimilar forms; but I merely intend to convey the idea that a close examination of these forms develop conditions not so much in their forms perhaps, or in their magnitude, as in their behavior in the presence of a particular influence.

DR. ALLEN: I would like to say another word, sir, and that is to express my utter and wholesale disbelief in the germ theory, from beginning to end. I said the same thing at the State society in New York, and gave my reasons for it, at the time the germ theory was propounded; but it has seen its day, and it is coming down, and its adherents are leaving it, as the rats leave a sinking ship. It is necessary for us, as homœopaths, to abandon it, because the action of disease upon a foreign substance, or the action of a foreign substance or foreign matters upon the body, can be no other than similar to the action of drugs upon the human body, and that can only be simple in form, essentially one of contact.

A particle of Arsenic enters the body; a scale from a scarlet fever patient comes in contact with one unmodified by scarlet fever poison, and induces molecular change which reproduces the scarlet fever and permanently modifies the tissues. The Arsenic sets up an arsenic condition, giving rise to a pathogenesis. The subdivision of the drug is of little moment so long as the molecular activity be kept excited by potentiation. It makes little difference whether one potency contains more molecules than another, except that a certain *molecular* division seems to favor the transmission of molecular force. This transmission may continue *ad infinitum*, just as the transmission of disease may continue. It must all be explained by the contact theory and the influence of the oscillations of one set of molecules upon those of

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another set. The molecular action of a particle of gold affects the vehicle and is thus perpetuated to the end of time, it may be.

DR. ALLING: I endeavored to confine the statement in my paper to pure and scientific statements of what we know. I was careful not to give ideas, which I did not believe, in regard to the matter.

It is a matter of indifference what people believe about scientific matters anyway; but I endeavored to confine myself strictly to a few facts.

On motion, the discussion was closed.

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SECTION VI.

REPORT

OF THE

BUREAU OF ORGANIZATION, REGISTRATION, AND STATISTICS.

I. T. TALBOT, M.D., ... Boston, Mass.
H. M. SMITH, M.D., ... New York.
JONATHAN PETTIT, M.D., ... Cleveland.
E. M. KELLOGG, M.D., ... New York.
T. FRANKLIN SMITH, M.D., ... New York.
J. B. BELL, M.D., ... Augusta, Me.
B. W. JAMES, M.D., ... Philadelphia.

TO THE

THIRTY-SECOND SESSION

OF THE

American Institute of Homœopathy.

VOLUME I. NUMBER 9.

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CONTENTS.

XVIII. Reports of Societies, Clubs, Hospitals, Colleges, Journals, etc., . I. T. TALBOT, M.D.

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XVIII.

*REPORT OF THE BUREAU OF ORGANIZATION, REGISTRATION, AND STATISTICS.**

By I. T. Talbot, M.D., Boston, Mass.

National and Foreign Associations.

Western Academy of Homœopathy.—A. S. Everett, M.D., delegate. No report received.

Officers, 1879–1880: George S. Walker, M.D., St. Louis, President; C. H. Vilas, M.D., Chicago, J. T. Boyd, M.D., Indianapolis, R. L. Hill, M.D., Dubuque, Vice-Presidents; C. H. Goodman, M.D., St. Louis, General Secretary; Henry W. Roby, M.D., Chicago, Provisional Secretary; G. W. Foote, M.D., Galesburg, Treasurer.

American Homœopathic Ophthalmological and Otological Society.—This is the third year of the society, which has held its annual sessions at the same place, and during the session of the American Institute of Homœopathy.

The officers for the ensuing year are W. H. Woodyatt, M.D., President; Henry C. Houghton, M.D., and F. Park Lewis, M.D., Vice-Presidents.

British Homœopathic Society.—A. C. Pope, M.D., delegate.

This society meets monthly at the London Homœopathic Hospital.

State Societies.

Maine Homœopathic Medical Society.—C. H. Burr, M.D., and William Gallupe, M.D., delegates.

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* This report was received too late for its proper place in the volume.—J. C. G.

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This society was organized in 1867; whole number of members who have joined, 65; present number, 48.

No one has been admitted to membership who has not graduated regularly from some legally authorized medical college. Annual meeting held on the first Tuesday and Wednesday in June. Next meeting is to be held at Augusta. Some persons are practicing in this State without the suitable qualifications. There is no legal authority to prevent this. It is very desirable that a suitable law should be passed, controlling such practitioners.

The officers for the present year are Charles M. Foss, M.D., Dexter, President; Thomas M. Dillingham, M.D., Augusta, William K. Knowles, M.D., Bangor, Vice-Presidents; William Frank Shepard, M.D., Bangor, Recording Secretary; James B. Bell, M.D., Augusta, Corresponding Secretary; Levi H. Kimball, M.D., Bath, Treasurer; William Gallupe, M.D., Milton S. Briry, M.D., Charles H. Burr, M.D., William L. Thompson, M.D., David N. Skinner, M.D., Censors.

New Hampshire Homœopathic Medical Society.—No delegates and no report received.

Vermont Homœopathic Medical Society.—G. E. E. Sparhawk, M.D., and C. S. Hoag, M.D., delegates.

This society has 65 members. It holds the annual meeting in October, and the semi-annual meeting in January.

H. C. Brigham, M.D., Montpelier, President; W. A. Donaldson, M.D., Vice-President; C. S. Hoag, M.D., Waterbury, Secretary; W. B. Way, M.D., Northfield, Treasurer; J. H. Jones, M.D., Bradford, C. H. Chamberlain, M.D., Barre, G. E. E. Sparhawk, M.D., Burlington, Censors.

Massachusetts Homœopathic Medical Society.—T. S. Scales, M.D., H. L. Chase, M.D., David Thayer, M.D., E. U. Jones, M.D., N. R. Morse, M.D., I. T. Talbot, M.D., D. B. Whittier, M.D., C. H. Farnsworth, M.D., M. J. Flanders, M.D., A. M. Cushing, M.D., delegates.

This society was organized in 1840, and incorporated in 1856. Number of present members, 165; number of past members, 49; total, 214.

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The annual and semi-annual meetings are held in Boston on the second Wednesday of April and October. The proceedings of the society are published to date, and consist of four volumes, and the proceedings of the past year in pamphlet form.

Officers for 1879–1880: T. S. Scales, M.D., Woburn, President; Lewis Whitney, M.D., Danvers, Vice-President; Frederick W. Payne, M.D., Boston, Corresponding Secretary; Nathan R. Morse, M.D., Salem, Recording Secretary; H. C. Clapp, M.D., Boston, Treasurer; J. T. Harris, M.D., Boston, Librarian; E. U. Jones, M.D., Taunton, A. M. Cushing, M.D., Lynn, Charles Sturtevant, M.D., Hyde Park, R. E. Jameson, M.D., Jamaica Plain, James Hedenburg, M.D., Medford, Censors.

The Rhode Island Homœopathic Society.—William von Gottschalk, M.D., John C. Budlong, M.D., George B. Peck, Jr., M.D., delegates.

This society was organized and chartered in 1850. There are 35 active members. The society meets quarterly. The society exercises supervision and control of the dispensary located in Providence. A charter for a homœopathic hospital has been obtained, and a library established in Providence. The number of professedly homœopathic physicians in the State is 49, one of whom has recently been appointed a member of the State board of health.

William von Gottschalk, M.D., President; George B. Peck, Jr., M.D., Secretary.

Connecticut Homœopathic Medical Society.—George H. Foote, M.D., G. H. Wilson, M.D., H. M. Bishop, M.D., delegates. This society was organized November 17th, 1851, and incorporated June 10th, 1864. The annual meetings are held alternately in New Haven and Hartford on the third Tuesday in May. The semi-annual meetings are held as voted at the annual meeting. Number of active members, 49; number of honorary members, 15.

Officers 1879-80, elected May 20th, 1879: William D. Anderson, M.D., New Haven, President; W. B. Dunning, M.D., Hartford, Vice-President; Henry M. Bishop, M.D., Norwich, Recording Secretary; George P. Swift, M.D., Waterbury, Cor-

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responding Secretary; James D. Johnson. M.D., Hartford, Treasurer; Henry E. Stone, M.D., Fair Haven, Charles E. Sanford, M.D., Bridgeport, George F. Foote, M.D., Stamford, E. P. Gregory, M.D., Waterbury, C. Mansfield, M.D., Meriden, Board of Censors; G. A. Wilson, M.D., West Meriden, Librarian.

Homœopathic Medical Society of the State of New York.—E. Carleton, Jr., M.D., L. M. Kenyon, M.D., H. V. Miller, M.D., H. L. Waldo, M.D., delegates. This society consists of 100 delegate members, 193 permanent members, 50 honorary members. Its annual meeting is held at Albany on the second Tuesday and Wednesday of February. The semiannual meeting is held on the second Tuesday and Wednesday of September, at such place as is designated at the previous annual meeting. This year it will be held at Rochester, September 9th and 10th.

Five hundred copies of the *Transactions* of the society for the year 1879 are to be printed at the expense of the State for the use of the society. Prior to 1872 the *Transactions* were always printed at the State expense; but since then the society has had to pay for its own printing..

Officers for 1879–80: Asa S. Couch, M.D., Fredonia, President; Alfred K. Hills, M.D., New York, E. Hasbrouck, M.D., Brooklyn, John J. Mitchell, M.D., Newburgh, Vice-Presidents; Howard L. Waldo, M.D., West Troy, Recording Secretary; A. P. Hollett, M.D., Havana, Corresponding Secretary; E. S. Coburn, M.D., Troy, Treasurer. Censors: Northern District—Drs. H. D. Brown, G. W. Little, and L. A. Clark. Southern District—Drs. E. Hasbrouck, J. H. Demarest, and S. H. Talcott. Middle District—Drs. W. C. Doane, M. O. Terry, and William A. Hawley. Western District—Drs. W. B. Kenyon, Charles Sumner, and N. Osborne.

New Jersey State Homœopathic Medical Society.—J. J. Youlin, M.D., delegate. No report received.

Maryland Homœopathic Medical Society of Baltimore City.—F. R. McManus, M.D., Thomas Shearer, M.D., delegates.

This society was organized December 16th, 1875. Number of members, all active, is 23. Its meetings are held annually, at

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such time and place as shall be designated at the annual meeting next preceding. This year October 8th has been appointed.

Officers: Morris Weiner, M.D., President; Eldridge C. Price, M.D., Baltimore, Secretary.

Pennsylvania Homœopathic Medical Society.—No delegates reported. No report received.

Homœopathic Medical Society of Ohio.—No delegates reported.

The society meets annually on the second Tuesday of May.

Officers for 1879: H. H. Baxter, M.D., Cleveland, President; E. P. Gaylord, M.D., Toledo, First Vice-President; E. V. Van Norman, M.D., Springfield, Second Vice-President; H. M. Logee, M.D., Oxford, Secretary; J. C. Sanders, M.D., Cleveland, Treasurer.

Tennessee State Homœopathic Medical Society.—J. P. Dake, M.D., delegate. No report received.

Indiana Institute of Homœopathy.—W. C. Breyfogle, M.D., M. T. Runnels, M.D., delegates.

Illinois Homœopathic Medical Association.—D. S. Smith, M.D., R. Ludlam, M.D., A. E. Small, M.D., W. Danforth, M.D., L. Pratt, M.D., W. H. Woodyatt, M.D., J. S. Mitchell, M.D., A. G. Beebe, M.D., J. W. Streeter, M.D., E. M. Hale, M.D., M. B. Campbell, M.D., J. H. Beaumont, M.D., G. W. Foote, M.D., A. W. Woodward, M.D., W. F. Cooke, M.D., G. A. Hall, M.D., F. H. Van Liew, M.D., W. C. Barker, M.D., J. A. Vincent, M.D., T. C. Duncan, M.D., delegates. No report received.

Officers for 1879–80: J. H. Beaumont, M.D., Freeport, President; F. L. Bartlett, M.D., Aurora, First Vice-President; Mrs. Julia H. Smith, M.D., Chicago, Second Vice-President; E. M. Ballard, M.D., Chicago, Secretary; A. G. Beebe, M.D., Chicago, Treasurer.

Homœopathic Medical Society of the State of Michigan.—T. F. Pomeroy, M.D., W. J. Calvert, M.D., H. C. Allen, M.D., delegates. No report received.

Homœopathic Medical Society of the State of Wisconsin.—L. Sherman, M.D., Samuel Potter, M.D., delegates.

This society is reported as in a flourishing condition.

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The Hahnemann Medical Association of Iowa.—A. C. Cowperthwaite, M.D., P. W. Paulson, M.D., G. Neuman Seidlitz, M.D., delegates. No report received.

Officers for the presidential year ending May, 1880: H. P. Button, M.D., Iowa City, President; W. T. Virgin, M.D., Burlington, Treasurer; E. A. Guilbert, M.D., Dubuque, Secretary.

Minnesota State Homœopathic Institute.—Delegates not reported.

The annual meeting was held at Minneapolis, May 20th and 21st, 1879. The work of the society is divided into bureaus, which embrace all the leading subjects and which report annually.

Officers for 1879–80: A. E. Higbee, M.D., Minneapolis, President; E. Walther, M.D., St. Paul, First Vice-President; C. W. Crary, M.D., Lake City, Second Vice-President; G. H. Hawes, M.D., Hastings, Secretary and Treasurer; H. C. Leonard, M.D., Henderson, Corresponding Secretary.

H. Hutchinson, M.D., St. Paul, A. S. Hutchinson, M.D., Minneapolis, H. C. Leonard, M.D., Henderson, Censors.

D. M. Goodwin, M.D., Minneapolis, A. A. Camp, M.D., Minneapolis, G. H. Hawes, M.D., Hastings, Executive Committee.

The Missouri Institute of Homœopathy.—No delegates.

This society meets annually, and has now 25 members.

County or Local Societies.

Boston Homœopathic Medical Society.—F. H. Krebs, M.D., delegate.

This society meets on the second Thursday of each month. Several valuable papers have been presented the past year, which have given rise to interesting discussions.

Officers for 1879: J. H. Sherman, M.D., President; M. P. Wheeler, M.D., Secretary.

Essex County Homœopathic Medical Society.—George Morse, M.D., delegate.

This society was organized June 5th, 1872, and meets on the fourth Wednesday of each month.

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Its annual and semiannual meetings are held in December and June.

An annual field day or picnic is held in the month of July, at which members and their families, and friends possibly interested in homœopathy, are invited. Frequently several hundred are present, and the day is spent in rural sports, social entertainments, singing, and speaking. Present members, 40; past members, 7; total, 47.

Officers for 1879: C. W. Scott, M.D., President; N. R. Morse, M.D., Secretary.

Middlesex South Homœopathic Medical Society, Mass.—E. P. Scales, M.D., delegate.

This society was organized January, 1876. The number of members is 20, and it meets on the first Thursday of each month.

Worcester County Massachusetts Homœopathic Medical Society.—J. M. Barton, M.D., delegate.

This society was organized in 1866. The number of active members is 20, and it holds meetings quarterly.

Officers for 1879–80: F. R. Sibley, M.D., Worcester, President; Charles L. Nichols, M.D., Worcester, Secretary.

Bristol County Homœopathic Medical Society, Mass.—No report received.

Central Homœopathic Medical Society of New York.—No delegate.

Active members, about 50. Honorary members, 3.

This society embraces ten counties, and holds monthly meetings. It is a voluntary association, and not organized under the State laws.

Officers for 1879–80: C. W. Boyce, M.D., Auburn, President; H. V. Miller, M.D., Syracuse, Secretary.

Oneida County Homœopathic Medical Society, N. Y.—L. B. Wells, M.D., delegate.

Active members, 22. Honorary members, 29.

This society meets semiannually, on the third Tuesday of October and June.

The Homœopathic Society of Westchester County, New York.—O. D. Kingsley, M.D., delegate.

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The number of active members is 17. The society has an annual and a semiannual meeting.

Officers for 1879–80: E. V. Brown, M.D., Tarrytown, President; R. Oliver Phillips, M.D., Yonkers, Secretary.

Homœopathic Medical Society of Camden, New Jersey.—H. F. Hunt, M.D., delegate.

This society was organized October 2d, 1878, and has 12 members. Meetings are held the second and fourth Wednesday of each month.

The Camden County Insane Asylum, a new institution, with about 60 inmates, is in charge of S. H. Quint, M.D., one of the members of this society.

Homœopathic Medical Society of the County of Philadelphia, Pa.—Charles Mohr, M.D., delegate.

Number of members, 73. The meetings have been largely attended, often by other than homœopathic physicians. During the winter season many of the college students were present. The following papers have been read during the past year: "Clinical Cases Illustrating the Principles of Homœopathy," by H. N. Guernsey, M.D.; "A Case of Puerperal Convulsions," by E. A. Farrington, M.D.; "The Drainage Question," by B. W. James, M.D.; "Illustration of Homœopathic Principles," by Ad. Lippe, M.D.; "Diseases of the Skin and Their Treatment," by H. N. Guernsey, M.D.; "How Condensed Milk is Prepared—Its Use as an Article of Diet for Infants" (two papers), by Joseph C. Guernsey, M.D.; "Stenosis of the Cervix," by H. N. Guernsey, M.D.; "The Incompatible Remedies of the Homœopathic Materia Medica," by Charles Mohr, M.D.; "Our Seaside Resorts, Their Advantages and Disadvantages," by B. F. Betts, M.D.; "State of Homœopathy in Europe, and Germ Theory of Disease," by C. Neidhard, M.D.

Officers for 1879–80: E. A. Farrington, M.D., President; Charles Mohr, M.D., Secretary.

Homœopathic Medical Society of Chester, Delaware, and Montgomery Counties, Pa.—Joseph E. Jones, M.D., delegate.

No report.

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Officers for 1879: T. Pratt, M.D., President; L. Hoops, M.D., Secretary.

Anatomical Society of Allegheny County, Pa.—J. F. Cooper, M.D., delegate.

This society was organized some four years since for the purpose of cultivating the study of anatomy. It holds monthly meetings, which are well attended. It has about 22 members, including practitioners and students of medicine. At each meeting a lecture on some anatomical subject is given and discussed. Its officers, annually elected, are a President, a Secretary, a Treasurer, and a Demonstrator. These, with two persons elected by the society, constitute an executive committee.

The Allegheny County Homœopathic Medical Society of Pennsylvania.—J. C. Burgher, M.D., delegate.

This society was founded in 1864, and numbers 38 members. It holds monthly meetings, with an average attendance of 22.

J. S. Rankin, M.D., President; T. M. Strong, M.D., Secretary.

The Baltimore Homœopathic Society.—E. C. Price, M.D., delegate.

M. Brewer, M.D., President; R. W. Mifflin, M.D., Secretary.

The Cleveland Academy of Medicine and Surgery.—H. B. Van Norman, M.D., delegate.

This society includes most of the sixty homœopathic physicians of Cleveland, ten of whom are ladies. The society, aside from its regular meetings for professional discussions, takes an active interest in aid of the numerous homœopathic institutions of Cleveland.

G. W. Jones, M.D., President; W. A. Phillips, M.D., Secretary.

The Cleveland Medical and Surgical Dispensary Society.—Martha M. Stone, M.D., delegate.

Myra Merrick, M.D., President; Kate Parsons, M.D., Secretary.

Cincinnati Homœopathic Medical Society.—William Owens, M.D., delegate.

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Jackson County Homœopathic Society of Physicians and Surgeons, Michigan.—W. J. Calvert, M.D., delegate.

W. J. Calvert, M.D., Secretary.

Milwaukee Academy of Medicine.—S. Potter, M.D., delegate.

Eugene F. Storke, M.D., Secretary.

Hahnemann Medical Society of Hennepin County, Minnesota.—This society was organized September 16th, 1872. It holds monthly meetings. The number of active members is ten.

College of Physicians and Surgeons of Michigan.—T. F. Pomeroy, M.D., delegate.

This society was organized October 21st, 1878, and incorporated January 20th, 1879. It has sixteen active, three corresponding, and seventeen honorary members.

Its library contains quite a number of volumes, and its museum is well inaugurated. Its laboratories are not yet established.

The following are its officers: T. F. Pomeroy, M.D., President; J. D. Craig, M.D., Vice-President; J. G. Gilchrist, M.D., Recorder; E. D. Wild, M.D., Treasurer; D. J. McGuire, M.D., Corresponding Secretary; G. B. Foster, M.D., Curator; F. Woodruff, M.D., J. D. Craig, M.D., D. J. McGuire, M.D., Executive Committee.

The St. Louis Society of Homœopathic Physicians and Surgeons.—This society consists of thirty members, and meets twice a month.

Medical Clubs.

Hughes Medical Club, Boston, Mass.—William L. Jackson, M.D., delegate.

This club was organized October 23d, 1878, by six young physicians, their object being mutual improvement and the perfection of their knowledge of homœopathy. It was named after Richard Hughes, M.D., of London. The Secretary and Treasurer is the only permanent officer. The chairman for the evening is elected at each meeting. The club consists of twelve members, and its meetings are held every two weeks. The number of members is limited, and consists entirely of young and active co-operators.

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Rhode Island Homœopathic Library Association.—G. B. Peck, Jr., M.D., delegate.

This association has a reading-room in connection with the dispensary, which is provided with the leading American and foreign medical journals.

Clinical Club of New York City.—Thomas Franklin Smith, M.D., delegate.

Hahnemann Medical Club of Philadelphia.—J. E. James, M.D., delegate.

This organization consists of eleven members, each one of whom has a specialty, on which he is authority for reports. The meetings are held monthly, and a constant full attendance is maintained.

Hahnemann Materia Medica Club of Minneapolis.—This club was organized June, 1878, and meets every fortnight. The number of active members is five.

St. Louis Medical Club.—No delegate.

This club has twelve members, and meets monthly.

American Homœopathic Publishing Society, Philadelphia.—Charles Mohr, M.D., delegate.

Officers, 1879: C. Hering, M.D., Philadelphia; W. P. Wesselhœft, M.D., Boston; Charles Mohr, M.D., Philadelphia; J. H. McClelland, M.D., Pittsburg; C. B. Knerr, M.D., Philadelphia; S. Lilienthal, M.D., New York; W. C. Goodno, M.D., Philadelphia, Board of Directors.

Constantine Hering, M.D., President; W. C. Goodno, M.D., Treasurer; C. Mohr, M.D., Secretary.

W. C. Goodno, M.D., C. B. Knerr, M.D., S. Lilienthal, M.D., W. P. Wesselhœft, M.D., C. Mohr, M.D., J. H. McClelland, M.D., Committee on Publication.

C. B. Knerr, M.D., C. Mohr, M.D., Committee on Finance.

This is a stock society, the object being to furnish the stockholders reliable works on homœopathy at the lowest prices at which they can be published, about forty per cent. below the ordinary trade prices. At the present time (June 17th, 1879) there are ninety stockholders, some holding as many as fifteen

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shares each, and residing in thirteen different States and Territories. The book published by the society has found purchasers in almost every State in the Union, and is finding a good sale in England, France, and Germany. The officers all serve without pay. The book already published is Vol. I of Dr. Hering's work, *The Guiding Symptoms.* Volume II of the same work is in press, and the MSS. for the succeeding volumes are all ready.

The next annual meeting for election of officers, etc., will be held in Philadelphia on the first day of November, 1879.

Hospitals.

Massachusetts Homœopathic Hospital.—E. B. de Gersdorff, M.D., delegate.

The hospital has had a very successful year, in that the number of patients has increased, the success in treatment is better, and its financial condition is improved. The number of patients the past year has been 173. Of these 117 have been cured, or greatly improved. The mortality reached but four per cent., and every one of the seven fatal cases was received into the hospital with a full knowledge of the probable result. One death from typhoid fever occurred but a few hours after entering, the patient being comatose when he was brought to the hospital.

Ward's Island Homœopathic Hospital, N. Y.—No delegate. No report.

New York City Homœopathic Hospital.—No delegate. No report.

New York Homœopathic Surgical Hospital.—No delegate. No report.

New York Ophthalmic Hospital.—Incorporated April 21st, 1852.

It was under allopathic direction prior to June, 1867, but has been under homœopathic direction since that time. It is located on the northeast corner of Third Avenue and Twenty-third Street, New York city. It is open for the reception of patients every day at two o'clock, Sundays excepted.

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Officers and Directors: Thomas C. Smith, President; George W. Clark, Vice-President; Elias C. Benedict, Treasurer; R. L. Keen, Assistant Secretary.

Surgical Staff, Ophthalmic Department: T. F. Allen, M.D., C. Th. Liebold, M.D., George S. Norton, M.D., Surgeons. D. B. Hunt, M.D., F. H. Boynton, M.D., Charles Deady, M.D., Assistant Surgeons.

Aural Department: Henry C. Houghton, M.D., Surgeon; William E. Rounds, M.D., Assistant Surgeon; C. E. Beebe, M.D., J. M. Schley, M.D., Laryngoscopists. G. E. Belcher, M.D., P. P. Wells, M.D., H. D. Paine, M.D., C. A. Bacon, M.D., J. McE. Wetmore, M.D., Consulting Staff.

J. H. Buffum, M.D., Resident Surgeon; B. E. Mead, Med. Student, Apothecary; C. F. Barnes, Med. Student, Assistant Apothecary.

Buffalo Homœopathic Hospital.—N. Osborn, M.D., delegate. No report.

Children's Homœopathic Hospital of Philadelphia, Pa.—Bushrod W. James, M.D., delegate.

This institution was incorporated about two years ago, with twenty-five beds. It is located at the corner of Eighth and Poplar streets. Up to May 1st, 1879, there had been treated ninety-six cases, with a mortality of eight, several of which were infants that died during the hot weather. There is a flourishing dispensary for out patients.

The attending physicians are selected from the active practitioners of the city and number twelve, one for each month.

The following is the full medical staff: Robert J. McClatchey, M.D., A. H. Ashton, M.D., C. S. Middleton, M.D., John E. James, M.D., M. S. Williamson, M.D., M. M. Walker, M.D., B. F. Betts, M.D., Bushrod W. James, M.D., E. A. Farrington, M.D., Pemberton Dudley, M.D., W. H. H. Neville, M.D., A. Korndœrfer, M.D., Visiting Physicians; C. Hering, M.D., J. Kitchen, M.D., C. Neidhard, M.D., Thomas C. Williams, M.D., Consulting Physicians; John E. James, M.D., Surgeon; Francis Sims, M.D., Consulting Surgeon; Bushrod W. James, M.D., Diseases of the Eye, Heart, and Lungs; Frank M. Earle, M.D., Dentist.

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Pennsylvania Homœopathic Hospital for Children.—Charles Mohr, M.D., delegate.

This hospital contains twenty-five beds, which can be increased to thirty if necessary. The building and grounds are rented, with the hope of subsequent purchase. There are at present nineteen patients in the hospital. Miss Helen W. Hinkley, Secretary, 241 South Eighteenth Street, Philadelphia.

The Homœopathic Medical and Surgical Hospital and Dispensary, Pittsburg, Pa.—W. H. Winslow, M.D., delegate.

The hospital has forty beds. The thirteenth annual report shows cases treated in the last year: Cured, 143; improved, 16; removed for various causes, 24; escaped, 5; died, 6; remaining, 11. Total, 205. Mortality less than three per cent.

The number of professional services rendered by dispensary staff for last year, 18,351; total per last report, 93,314. Total since dispensary opened, 111,665.

Officers of the Medical Board of the institution, chosen May 6th, 1879: J. F. Cooper, M.D., President; William R. Childs, M.D., Secretary; J. F. Cooper, M.D., Consulting Physician; J. H. McClelland, M.D., L. H. Willard, M.D., C. P. Seip, M.D., William R. Childs, M.D., Surgical Staff; J. S. Rankin, M.D., C. F. Bingaman, M.D., R. E. Caruthers, M.D., W. J. Martin, M.D., Medical Staff; H. H. Hoffman, M.D., J. C. Burgher, M.D., Obstetrical and Gynæcological Staff; W. H. Winslow, M.D., Eye and Ear Department; J. C. Burgher, M.D., M. J. Chapman, M.D., W. F. Edmundson, M.D., S. Woods, M.D., O. R. Shannon, M.D., R. V. Pitcairn, M.D., John Cooper, M.D., T. M. Strong, M.D., Dispensary Staff.

Cleveland Homœopathic Hospital.—D. H. Beckwith, M.D., delegate. No report.

Good Samaritan Hospital, St. Louis, Mo.—This hospital contains two hundred beds and is under the care of homœpathic physicians and surgeons.

Infirmaries, Homes, etc.

Home of the New England Moral Reform Society, Boston, Mass.—C. E. Hastings, M.D., delegate. No report.

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Consumptives' Home, Boston, Mass.—C. Cullis, M.D., delegate. No report.

Sheltering Arms, Norwich, Conn.—J. E. Linnell, M.D., delegate.

About one year ago the lady managers of this institution voted that it should be opened to patients with equal right to elect their own physician. Whereupon the old-school doctors voted to have nothing to do with this public charity, so long as the homœopathists were allowed to continue their visits. This gave exclusive control to the new school, with one exception, that of a chronic patient, who is still visited by her old-school doctor, in violation of his pledge to his brother doctors.

The institution is small and has lately had every bed occupied. The patients have been mostly chronic cases and all have recovered or are in process of recovery. The institution is supported mostly by charitable contributions, though there have been a few paying patients. The prospect for next year is good.

Home for Inebriates.—G. F. Foote, M.D., delegate.

This is located at Stamford, Connecticut, and is designed for the cure of inebriates and the mild forms of nervous diseases.

Camden County, New Jersey, Insane Asylum.—L. H. Quint, M.D., delegate. No report.

House of the Little Sisters of the Poor, Allegheny, Pa.

This institution was established in Allegheny City, Pennsylvania, in 1872. It has for its object the cure and maintenance of decrepit men and women about the age of sixty years. It has at the present time under its charge ninety-two inmates. Of this number eight died during the year 1878. Although the mortality is necessarily large, yet the prompt action of the well-applied remedy is frequently observed.

Dr. T. M. Strong is the attending, and Dr. L. M. Rousseau the consulting physician.

DISPENSARIES.

Boston Homœopathic Medical Dispensary.—A. Boothby, M.D., delegate.

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This dispensary embraces three branches, or properly three distinct dispensaries, viz.: The Central, the West End, and the College Dispensaries; it is supported by a fund raised in 1859 by means of a fair. This single public effort proved sufficient to permanently establish and support this dispensary up to the present time; and furthermore, it has been a stepping-stone to the hospital. During the past year it has treated 13,289 patients and furnished 32,615 prescriptions. Its officers, elected in January, are Hon. Otis Clapp, President; H. C. Angell, M.D., Treasurer; I. T. Talbot, M.D., Secretary, and eight additional trustees.

Rhode Island Homœopathic Dispensary.—W. von Gottschalk, M.D., delegate. This dispensary is located in Providence. During the year 1878, 2494 prescriptions were issued to 1281 patients; 1865 visits were made to 366 applicants; 117 dental cases. Most of the patients pay for their medicines. The dispensary is under the control of the Rhode Island Homœopathic Society. The rent is paid by the Ladies' Homœopathic Hospital Aid Association.

Gates Avenue Homœopathic Dispensary, Brooklyn, N. Y.—This dispensary is located at the junction of Gates and Fulton avenues, and was established February, 1867. J. M. Keep, M.D., Medical Director; Samuel Talmage, M.D., House Physician. The report for the year ending September 30th, 1878, is as follows: Number of patients treated, 3297; number of prescriptions dispensed, 4927; number of visits made to homes of patients, 286. The annual election is held on the first Thursday succeeding the first Monday of January.

Buffalo Free Medical and Surgical Dispensary.—A. T. Bull, M.D., delegate. This dispensary has been in successful operation since the first of May. It is the recent successor of a dispensary that was in active operation some ten years ago, which received its support from voluntary offerings of the patrons of homœopathy in the city, together with an annual appropriation from the State of $500. This appropriation being cut off the interest in the institution declined. During the winter of 1878–79 a charter was obtained to organize a dispensary on

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the Provident system. This was conducted in conjunction with the Buffalo city charity organization. All the homœopathists are now united in the city and working together as one man. The institution is supported entirely by voluntary contributions from the homœopathic physicians of Buffalo, and has been thoroughly advertised throughout the city. The following is a list of the officers and charter members: H. O. Frost, M.D., President; H. J. Beals, M.D., Secretary; D. B. Stumpf, M.D., H. S. Colton, M.D., H. J. Beals, M.D., A. C. Hoxie, M.D., H. C. Frost, M.D., J. S. Halbert, M.D., W. B. Kenyon, M.D., charter members.

Women's and Children's Free Medical and Surgical Dispensary, Cleveland, Ohio.—Martha M. Stone, M.D., delegate. This institution was organized and is conducted by lady physicians. It opened May 1st, 1878. During the past year the number of patients has been 1175; prescriptions, 4000; amount of expenditures, $329.40; amount of receipts, $251.50. The funds for the support of this dispensary are contributed entirely by ladies.

Cottage Hospital Homœopathic Dispensary, Minneapolis, Minn.—Number of patients treated to June, 1879, some two and a half years, about 422; number of prescriptions for same time, 725.

Cincinnati Homœopathic Free Dispensary.—J. D. Buck, M.D., delegate. No report.

College Free Dispensary, St. Louis, Mo.—Since its opening, in September, 1878, 2000 patients have been treated, and 6000 prescriptions administered.

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ANNUAL REPORTS OF THE HOMŒOPATHIC MEDICAL COLLEGES IN THE UNITED STATES TO THE AMERICAN INSTITUTE OF HOMŒOPATHY, AT ITS SESSION OF 1879, HELD AT LAKE GEORGE, N. Y.

TABLE NO. 1.

Total number of Colleges in the United States, 13. Total number reported, 10.

NAME OF COLLEGE.	Session opened.	Session closed.	No. of Matriculants.	No. of Didactic lectures.	No. of Clinical lectures.	No. of Clinical cases.	No. of Graduates.		
							Male.	Female.	Total.
Boston University School of Medicine.....	October 9th, 1878.....	June 4th, 1879.....	149	1167	110	12000	25	10	35
New York Homœopathic Medical College.....	October 1st, 1878.....	March 12th, 1879.....	153	722	141	†			42
Hahnemann Medical College of Philadelphia..	September 31st, 1878.	March 10th, 1879.....	192	660	132	1010			61
Homœopathic Hospital College of Cleveland...	September 25th, 1878.	March 12th, 1879.....	108	576	192	1320			25‡
Pulte Medical College of Cincinnati.....	October 3d, 1878.....	February 26th, 1879..	66	420	399	500			32
Michigan University, Homœopathic Dep'ment.	October 1st, 1878.....	March 26th, 1879.....	63	900×	170	363	18	3	21
Michigan University, Homœopathic Dep'ment.		June 26th, 1879					2	3	5
Hahnemann Med. Coll. and Hosp. of Chicago.	October 1st, 1878.....	February 27th, 1879..	197	†	†	†			62‡
Chicago Homœopathic College.....	October 2d, 1878.....	April 2d, 1879.....	110	528	192	†	27	4	31
Iowa University, Homœopathic Department...	October 10th, 1878....	March 2d, 1879.....	32	200	54	137			3
Homœopathic Medical College of Missouri.....	October 9th, 1878.....	March 1st, 1879.....	40	600	100	960	15	3	18
Total.....			1110	5773×	1490	16290			335

† Not stated in the report.

‡ Mixed classes, but sex not designated in the report.

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TABLE NO. 2.

NAME OF COLLEGE.	Arkansas.	Barbadoes.	California.	Canada.	Colorado.	Connecticut.	Cuba.	Delaware.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Missouri.	Nebraska.	New Hampshire.	New Jersey.	New York.	North Carolina.	Ohio.	Ontario.	Oregon.	Pennsylvania.	Rhode Island.	Tennessee.	Vermont.	Virginia.	West Indies.	Wisconsin.	Wyoming.	Total.
	RESIDENCES OF GRADUATES.																																			
Boston University School of Medicine											1			4		26					1							1			1			1		35
New York Homœopathic Medical College						5			1	1		1	1	1		1						4	21		1			4	1							42
Hahnemann Medical College, Philadelphia		1					1	2	1				1	1	1			4				6	4	1	3			32	1			2				61
Homœopathic Hospital College, Cleveland											1			1			1						2		14	3		2					1			25
Pulte Medical College, Cincinnati	1		1						2	4					1	2	2								19											32
Michigan University, Homœopathic Department										2							15		1				2		1	1		2		2						26
Hahnemann Med. College and Hospital, Chicago				1	1				9	1	8		1				6	5		1	1	1	5				2	1			1	1		16	1	62
Chicago Homœopathic College									23	3	1						2											1						1		31
Iowa University, Homœopathic Department											3																									3
Homœopathic Medical College, Missouri	1								2	2	2								11																	18
Total	2	1	1	1	1	5	1	2	38	13	16	1	3	7	2	29	26	9	12	1	2	11	34	1	38	4	2	43	2	2	2	3	1	18	1	335

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COLLEGES.

Boston University School of Medicine.—I. T. Talbot, M.D., delegate. This school, which has closed its sixth year, forms the medical department of Boston University. It has from its foundation conformed to the suggestions of the American Institute of Homœopathy in the following ways:

1. The requirement that the candidate for admission must either present the diploma of a Bachelor of Arts, or pass a suitable entrance examination.

2. The provision of a carefully graded course of instruction, covering at least three scholastic years.

3. The requirement that every student pass a successful examination upon the work of each year before promotion to the next.

4. The requirement, as a condition of graduation, not merely that the candidate shall have studied medicine at least three full years, but that he shall have attended a reputable medical school for three years.

5. The abolition of all sex disabilities, either in teaching or learning.

During the past year it has taken the following advance steps:

1. The extension of the annual lecture term from five months to the full university year.

2. The provision of two optional *four years' courses* for those who wish to pursue their professional studies with exceptional thoroughness, and with suitable leisure for collateral reading; and

3. The restoration of the long-lost degrees of *Bachelor of Medicine* and *Bachelor of Surgery*, to be attained by those who take a four years' course at the end of the third year.

The number of matriculants in attendance the past year is 149.

New York Homœopathic Medical College.—J. W. Dowling, M.D., delegate.

New York Medical College and Hospital for Women.—S. Lilienthal, M.D., delegate.

New York Ophthalmic School and Hospital.—T. F. Allen, M.D., delegate. Lectures are given daily at 2 P.M. through the

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winter. Daily clinical instruction is also given, the average number of patients being 136. It confers the degree *Oculi et Auris Chirurgus.*

Hahnemann Medical College of Philadelphia.—Professor Pemberton Dudley, M.D., and Professor O. B. Gause, M.D., delegates. The thirty-first annual session of this college closed March 10th, 1879. It was attended by 192 students, as follows: Attending 2 years' course, 95; attending 3 years' graded course, 85; graduates taking an extra course, 6; old-school graduates, partial graded course, 6. Total, 192. The graduating class numbered 61. Of this number the 2 years' course had been taken by 33; the 3 years' graded course, by 22; graduates of old school, 6. Total, 61.

As will be noticed above, nearly one-half the class took the three years' graded course, and the proportion is each year increasing. This course being now in quite successful operation, at an early day it will be made obligatory upon all. The gradual introduction of this method of study has been thought more advisable than a sudden change, which would be attended by much confusion and awkwardness on the part of both teacher and pupil.

Feeling the importance of offering students opportunities for the practical study of as many branches as possible, during the past year there has been added a department of practical microscopy. This department has been abundantly supplied with first-class microscopes and accessories, and here students of the graded course are carefully drilled in the handling of the instruments, preparing and mounting specimens, etc., by a competent instructor.

The practical studies now offered by the college are as follows: Anatomy, surgery, obstetrics, chemistry, and microscopy.

Special rooms are provided and competent demonstrators furnished for each of these subjects.

The following is a summary of the clinical lectures delivered during the session to the whole class of students, as well as to many physicians who attended as regularly as their time per-

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mitted: Surgery, 175; eye, 331; ear, 105; gynæcology, 201; medical, 198. Total, 1010.

Homœopathic Hospital College of Cleveland.—J. C. Sanders, M.D., delegate.

Pulte Medical College, Cincinnati, Ohio.—D. W. Hartshorne, M.D., delegate.

Cincinnati Homœopathic School of Ophthalmology and Otology.—T. P. Wilson, M.D., delegate.

Hahnemann Medical College of Chicago.—No delegate.

Chicago Homœopathic College.—W. H. Woodyatt, M.D., delegate. This college has completed its third annual session. There were 110 matriculants. The graduating class numbered 31. The session was of six months' duration, with a mid-term examination, as well as a final one. The final examinations on thirteen chairs are all written, and the papers presented are preserved for reference. Clinical facilities are afforded by the Central Homœopathic Dispensary, with two thousand prescriptions monthly, and fifteen hundred visits to out-patients during the term; also by the Cook County Hospital, one of the largest and most complete in the country.

Officers: J. S. Mitchell, M.D., President; Charles Adams, M.D., Secretary; W. H. Woodyatt, M.D., Treasurer; A. W. Woodward, M.D., Business Manager.

Homœopathic Department of Iowa State University.—Professor A. C. Cowperthwaite, M.D., delegate. No report.

Homœopathic Medical College of Missouri.—The thirteenth annual commencement was held February 27th, 1879. Number in graduating class, 18. Officers of the Board of Trustees: C. W. Spalding, M.D., President; A. S. Everett, M.D., Secretary; W. C. Richardson, M.D., Treasurer. Officers of the Faculty: G. S. Walker, M.D., Dean; Philo G. Valentine, M.D., Registrar and Business Manager.

JOURNALS.

Homœopathic Review (monthly).—Edited by Drs. Pope and Dyce Brown. Published by G. Gould & Son, London, England.

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Price $4 per volume, or twelve numbers. Volume commences in January.

British Journal of Homœopathy (quarterly).—Editors, Drs. Dudgeon and Hughes. Publisher, J. E. Adlard, London, England. Price, $4 per vol., or four numbers. Volume commences in January.

The Organon, a quarterly Anglo-American journal. Editors, Thomas Skinner, M.D., Edward W. Berridge, M.D., Adolph Lippe, M.D., Samuel Swan, M.D. Published at Liverpool. Price, $4. Volume commences in January.

Homœopathic World (monthly).—Edited by Dr. Shuldham, Homœopathic Publishing Company, London. Price, $2 per vol., or twelve numbers. Volume commences in January.

New England Medical Gazette (monthly).—Editor, Herbert C. Clapp, M.D. Publishers, Otis Clapp & Son, Boston, Mass. Price, $1 per vol., or twelve numbers. Volume commences in January. H. C. Clapp, M.D., delegate.

Homœopathic Times (monthly).—Editors, E. Guernsey, M.D., Alfred K. Hills, M.D., J. G. Gilbert, M.D., New York. Price, $3 per vol., or twelve numbers. Volume commences in April. A. K. Hills, M.D., delegate.

North American Journal of Homœopathy (quarterly).—Editor, S. Lilienthal, M.D. Publishers, Boericke & Tafel, New York. Price, $4 per vol., or four numbers. Volume commences in August.

Hahnemannian Monthly.—Editor, W. H. Winslow, M.D. Publishers, Boericke & Tafel, Philadelphia, Pa. Price, $3. Volume commences in January. Subscription list about seven hundred.

Cincinnati Medical Advance (monthly).—Editor and publisher, T. P. Wilson, M.D., Cincinnati, Ohio. Price, $2 per volume, or twelve numbers. Volume commences in July.

American Homœopathist (monthly). — Editors, Charles E. Blumenthal, M.D., Arthur T. Hills, M.D. Publishers, A. L.

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Chatterton & Co., New York. Price, $2 for two vols., twelve numbers. Volume commences in January and July.

Medical Counsellor (monthly).—Editor, J. P. Mills, M.D. Publishers, W. A. Chatterton & Co., Chicago. Price, $2 per vol. of twelve numbers. Volume commences in April.

United States Medical Investigator (semi-monthly).—Editor, T. C. Duncan, M.D. Publishers, Duncan & Brother, Chicago, Ill. Price, $3 per vol., twenty-four numbers. Volume commences in January.

American Observer (monthly).—Editor and publisher, Edwin A. Lodge, M.D., Detroit, Mich. Price, $2.50 per vol., or twelve numbers. Volume commences in January.

Homœopathic News (monthly).—Editor, C. H. Goodman, M.D. Publisher, H. C. G. Luyties, St. Louis. Price, $1 per vol. Volume commences in January. A journal of 24 pages.

St. Louis Clinical Review (15th of each month). Editor and publisher, Philo G. Valentine, M.D., St. Louis. Price, $2 per vol. of twelve numbers. Volume commences in March. A journal of 40 pages.

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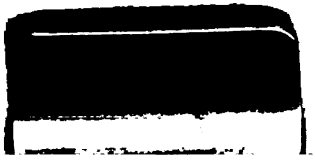

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